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Four Hundred Mile Truck Tour of St. Louis Motor Truck Dealers is a Wonderful Success

Thirty-Three Trucks Make the Round Trip Through Missouri and Illinois and Carry Direct to the Farmer and Small Town Resident the Message of the Modern Method of Transportation. Cordial Reception by Thousands All Along Route. Speaking and Moving Pictures at Night. How the Trip Was Managed

By A. V. COMINGS

HIRTY-THREE motor trucks of two-ton capacity and under, many of them loaded, left St. Louis early on the morning of Monday, June 9, on the start of a 400-mile tour of eastern Missouri and western Illinois, to demonstrate to the farmer, the small city dweller and to the residents of the entire St. Louis district that motor truck transportation is entirely feasible in that section, and to awaken local interest in the use of motor trucks for every transportation need. Five days later the caravan rolled back into St. Louis over the McKinley bridge spanning the Mississippi, the expedition having gone over its route absolutely on schedule time, over good roads and bad, making a record that will do more to help truck sales through the territory traversed and to develop interest in

motor truck transportation and good roads than could possibly have been accomplished by any individual and scattered effort.

Already Planning Another Run

So successful was the trip from a business standpoint that St. Louis truck dealers and distributors, several of whom entered the expedition as an experiment and almost against their better judgment, came home with the caravan enthusiastic in their conviction that it was the greatest resultgetting propaganda that had ever been conducted in the interest of motor truck sales. So thoroughly "sold" are the St. Louis dealers that already arrangements are being made for a simi-

lar expedition to traverse territory entirely within the state, heading westward through a circuit including the state capital and other leading cities of Missouri. This caravan will be limited to fifty trucks, and, judging from present indications, the limit will be reached long before the start of the second tour.

The expedition was sent out by the Commercial Car Bureau of the St. Louis Automobile Manufacturers' and Dealers' Association at the suggestion of Manager Harry G. Moock, of the National Automobile Dealers' Association. Robert E. Lee, secretary of the St. Louis organization, and a former

captain in the United States army, was commander-in-chief of the truck train, and he was assisted in handling the train by a staff of aides from the various St. Louis truck dealers' sales and service staffs.

Thorough preparation preceded the start of the truck train. A committee from the St. Louis association went over the route some time before the day set for the start, making arrangements in each city with commercial and auto trade bodies for the coming of the caravan, selecting the hotels where accommodations could be secured and otherwise paving the way for the tour. The result was that the caravan and its personnel was well cared for in the various stopping places, and there was no hitch in the schedule of presenting programs and carrying out other propaganda measures.

The widest possible publicity campaign was carried on for several weeks before the tour started, so that not only in the towns and cities were the trucks seen by thousands, but along the highways, at every cross-roads and at every farmhouse, people were gathered to see the trucks go by, to receive literature relative to highway transportation. and to get an actual personal idea of what the motor truck will mean to them in future transportation mat-

Farm work stopped as the long caravan wound past the farms along the route. Corn cultivation, already late, was made later by the passing of the train, for without exception every cultivator was driven to the

roadside, while the men on the cultivator seats watched the trucks roll past in impressive formation. Even the horses and mules along the roadside seemed interested, realizing perhaps that here was something that would eventually put them out of a job for all time.

Reception of the expedition was cordial all along the line. During the day, where possible, the caravan stopped in every village on the route, and if there was time a short program of speaking was carried through to enlighten the people as to the purposes of the trip. If there was not time for speaking, literature was handed out in abundance.



The caravan found a large crowd assembled at Rushville, Illinois; farmers coming from miles around to see the trucks



Hills held no terrors for the truck train



The caravan forded many small streams in Missouri and Illinois



At Beardstown the Mayor and a live committee welcomed the trucks. The Mayor is second from the right



Corn cultivating stopped dead while the caravan went by



Some roadmakers were encountered in Illinois



Wherever the trucks stopped a big crowd gathered to welcome them

A Speaking Program and Movies Every Night

Each night a fixed program of speaking, followed by an out-of-doors moving picture display, was given, always to an audience of several thousand people. For the speaker's stand the big GMC truck carrying a complete Delco lighting outfit was used. This lighting plant furnished current for strings of electric lights around the truck and for two big spotlights, which illuminated the scene brightly.

The commander, "Bob" Lee, presided at the evening speaking programs, usually outlining the purposes of the trip, what had been accomplished, and pointing out to the people what the motor truck would mean to them in the future. He introduced the speakers.

C. E. Lightfoot, chairman of the commercial car bureau of the St. Louis Automobile Manufacturers' and Dealers' Association, spoke each evening on the possibilities of the motor truck as a transportation factor not only between cities, but in the daily work of the farmer and the small town merchant.

L. H. Amrine, general manager of the Scudder Motor Truck Co., and T. C. Brandle, vice-president of the Traffic Motor Truck Corporation, were other speakers, who outlined different phases of the future of the motor truck as concerned with the daily life and needs of city and farm folk. Mr. Brandle turned out to be the real spellbinder of the oratorical constellation.

Harry G. Moock, manager of the National Automobile Dealers' Association, joined the caravan at Beardstown, and from then on was a valuable member of the speaking force. He particularly emphasized to his hearers the necessity of working for the passage by Congress of the Townsend road bill, and also carried on this propaganda verbally and by literature during the day stops of the trucks.

F. W. Fenn, secretary of the motor truck committee of the National Automobile Chamber of Commerce, joined the caravan on the last night and gave the citizens of Jerseyville something to think about in his address on motor trucks.

A. V. Comings, editorial representative of COMMERCIAL CAR JOURNAL, and the only trade journal representative with the expedition, told the audiences each evening of the splendid work accomplished by motor trucks throughout the United States where they had been installed in rural express service



Fifteen miles an hour over the hilly country roads



The Autocar carried a ton-load throughout the trip

and of the great accommodation it was to farmers and to merchants to have their goods delivered to them within 24 hours of placing the order, and with only one handling, as is the case with rural motor express transportation. He urged his hearers to look upon the motor truck expedition not as a spectacle arranged for their entertainment, but as a method of bringing seriously to their attention the importance of motor truck transportation in its relation to their future business and social life.

"This occasion is as important to you," he told his audiences, "as the driving of the final silver spike in the first transcontinental railroad was to many of the communities through which it passed. You are today at the driving of the final spike in the track of a new method of transportation that will link you with the outside world by quicker and better service than you have ever dreamed of before."

Each evening, as soon as darkness came, trainmaster Duffy unlimbered the moving picture machine mounted on the Maxwell truck, flashing moving pictures of motor trucks in all manner of rural service on the out-door screen usually stretched across a prominent street or against the side of a building where all could see. In addition the pictures were shown in local moving picture theatres where possible.

How the Caravan Moved

The trucks participating in the expedition were mobilized on a large vacant lot at Sarah and Pine streets, in St. Louis, on Sunday, and final instructions were issued the drivers and entrants at that time. Drawing for position was also arranged, so that no details remained to be cared for and cause delay on the morning of the start.

At 6.30 a. m. Monday morning Commander Lee gave the signal to start, and the caravan rolled off the lot onto city pavements, headed westward toward St. Charles, the first town on the itinerary, with a great blare of automobile horns and other noise making devices.

With a pilot car, containing Commander Lee, showing the way, and with several other passenger cars immediately following, filled with newspaper men, guests, etc., the unusual caravan wound its way out of the city, and, in spite of the early hour, many people lined the streets and watched the motor truck crusaders depart.



One of the All-American entries carried two papier-mache horses in a stock-rack



A complete Delco farm lighting plant was mounted on the GMC entry



A typical rest period along the tour



The two IHC trucks went through on pneumatic tires



Parking the trucks at Clayton



Dorris leading the caravan back into St. Louis over McKinley bridge

Blaring entry into successive villages, towns and cities was, perforce, more or less similar, yet those who accompanied the caravan retain vivid impressions of the individuality of each velcome

St. Charles, the first town through which the trucks rolled, evinced a curious interest, but because no stop had been advertised there, few more than paused to watch the passing motor trucks. Near enough to St. Louis to daily see great motor trucks coming and going, the St. Charles habitant was no more than mildly interested.

Wentzville showed the first real intensive interest. Several hundred Wentzvillians and farmers from surrounding acres were gathered to welcome the dusty truckmen to their first noon stop, and no sooner had the trucks swung into parking formation than they were surrounded by the eager and curious ones who wanted to be told the story of rural truck transportation.

Motor truck and good roads literature was given out generously, and promptly on schedule time the caravan left on the long afternoon grind, which landed the trucks in Louisiana, the first night's stop, shortly after six. Not a mishap

marred the first day's journey, of nearly ninety miles, and the thirty-three trucks came through quite as easily as though merely on a pleasure jaunt.

Tuesday's Program

The caravan was under way Tuesday morning by 7.30 and quick time was made to Hannibal, the noon stop. Just before arriving at Hannibal the expedition learned of the terrible fate that had come to Oscar Bricker, the aviator flying the Service plane ahead of the caravan,

the pilot coming down out of control in a Hannibal street and burning to a cinder when his gas tank exploded and enveloped plane and aviator in flames.

Hannibal automotive and commercial association members had planned to meet the expedition with a band, but the airplane accident made this rather out of place, and the program was dispensed with. The trucks were parked around the public square at Hannibal, where thousands visited them and received literature and first hand information as to truck performance.

Dinner was served at the Mark Twain Hotel, and late in the afternoon the train started for Quincy, Ill., crossing the Mississippi over the combined railroad and wagon bridge at Hannibal.

Quincy's reception to the truck tourists was the most enthusiastic of the entire trip. Mayor Philip O'Brien and a party of Quincy commercial and auto trade association men met the caravan several miles outside the city, and piloted the trucks to their parking place around the city square.

Later the usual evening program of speaking and moving pictures was given in the down town section, thousands of

Quincy people listening with careful attention to the various talks.

Things That Happened on Wednesday

Clayton was the dinner stop on Wednesday, and the drivers were given a real surprise by the Clayton town marshal, who met the caravan as it turned into Clayton's main street, and shunted the trucks and cars into their parking places quicker and more efficiently than at any other point on the entire trip.



Commander Lee tells the Mayor of Clayton and the editor of the Clayton paper what the truck tour means. The Mayor wears the derby.

Manager Harry Moock and Pilot Patterson are interested listeners



One of the Packard entries made a practical demonstration of long-distance hauling by taking two tons of leather from St. Louis to a shoe company at Hannibal



The Service entry was fitted with big pneumatics for the long journey



The Federal truck entry was fitted with a stock-rack body. It attracted attention from the farmers



One of the Republic entries carried a shipment of Firestone tires to the Hannibal branch of the Clough-Reihm Company

It was estimated that five thousand people were gathered at Rushville to see the caravan and to get first hand information as to motor truck service. They were given a good program and much individual effort was expended by those with the tour.

Beardstown, the night stop, welcomed the tourists with a large audience, but poor hotel accommodations, many of the drivers sleeping on cots in their trucks, owing to lack of hotel accommodations. This contingency had been foreseen, however, and the Denby truck entered in the tour carried a large number of cots which came in handy for the first time at Beardstown.

Farmers Greet Caravan in Big Numbers

Thursday's big demonstrations were at Jacksonville, where the noon stop was made, and at Whitehall and Carrolton, reached during the afternoon. Carrolton, especially, turned out in force, and many farmers from as far as twenty miles away had driven into the city to be present when the trucks arrived.

Jerseyville was the last night's control, and the mayor and prominent citizens joined in making the expedition welcome. They also joined, at a later hour, in giving the expedition some-

thing to remember Jerseyville by, for they played Hallowe'en pranks with trucks and cars, giving drivers considerable work to do by next morning's start.

Alton welcomed the truck tourists enthusiastically, and dinner was served the entire party at a local hotel. Mayor Sauvage welcomed the expedition, and at this dinner Commander Lee took occasion to thank everyone connected with the tour for the generous co-operation that had made the trip successful.

On arriving in St. Louis the caravan wound through the wholesale and shipping district to Washington Street, thence out Twelfth to Locust and out Locust through "automobile row" to the starting point, where it disbanded. Thousands saw the caravan wind through the St. Louis business district, and it brought home to them a realization of what the modern motor truck is, for the trip had been well advertised and each one realized that these dusty, begrimed motor trucks were finishing a trip which would have been impossible only a few years back for a similar number of automobiles, under similar conditions.

The Men Who Made the Trip

It is of interest to know something of the men who planned this trip and then hopped into their working clothes and went along to see that their plans were carried out and that the people along the route not only saw the trucks but learned what it was all about, and carried home with them not only "ship by truck" literature, but a personal conviction that the motor truck would be their shipping medium in the very near future.

"Charley" Lightfoot is chairman of the Motor Truck Bureau of the St. Louis Automobile Manufacturers' and Dealers' As-

sociation, and as such is the executive who looks after all motor truck interests in the association. He named the committee that managed this expedition and he named a good one. Lightfoot is the General Motor Truck representative in St. Louis, manages the branch, and is one of the biggest truck boosters in the southwest.

L. H. Amrine, chairman of the motor truck expedition committee, was mighty well chosen. General manager of the Scudder Motor



Parked in the wide main street of a Missouri village



J. V. Kallal and Charles Campbell discuss motor transportation of hogs with Commander Lee



The big White truck, entered by Firestone Tire and Rubber Company, carried a load of tires to Clough-Reihm Company's Branch at Quincy



The moving-picture projector was mounted on the Maxwell each night to show rural motor-truck pictures



F. W. Fenn tells some farmers hauling hogs that they can do it better and cheaper by truck

Truck Co., Service truck agent in St. Louis, Mr. Amrine visioned the possibilities of the tour the moment it was suggested to him, and his work both in planning the trip, eloquently setting forth the advantages of the truck wherever a stop was made for a speaking program, and in keeping things moving on the tour, was invaluable. Mr. Amrine is a lieutenant in the machine gun company of the St. Louis Home Guard, where he did valuable work during the war.

J. N. Magna, of the Federal Truck Co., of St. Louis, was a captain and assistant to the officer in charge of air craft motor production at Washington during the war, and lent keen assistance to the planning and management of the tour from first to last.

C. A. Aldrich, general manager of the Aldrich-Stephens Co., Hudford and Dearborn truck agents in St. Louis, was very active in preliminary arrangements and also provided two entries for the tour and a noisemaker that awakened

every inhabitant for miles around as the caravan wound into each town or city.

Frank Martin, of the Martin Motor Truck Co., Fulton, Denby and Diamond T truck agents, was one of those who helped plan the trip, and he also went part way with the caravan on its journey, his three entries making the round

Robert E. Lee, member of the committee and commander of the trip, is known throughout automobile and motor truck circles as "Bob" Lee and is the busiest man in the industry in St. Louis.



The tour ended on Friday the thirteenth and Trainmaster Duffy picked up a black cat that day. It was a lucky day for the caravan.

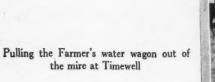


The gigantic Coodyear truck tire always attracted the kids



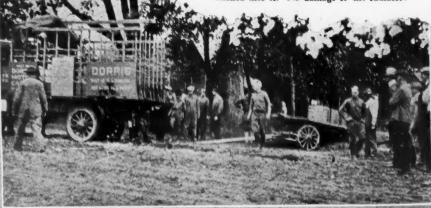
The town Marshal at Clayton handled the trucks like a veteran traffic officer

the mire at Timewell

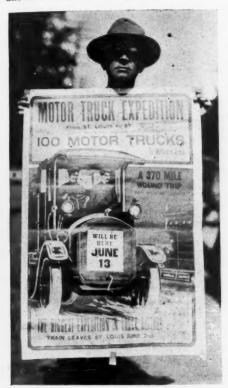




Early in the trip the Clydesdale's radiator guard made good when another truck backed into it. No damage to the radiator.



Not only is he secretary of the St. Louis Automobile Manufacturers' and Dealers' Association, but he is also editor and owner of the Auto Review, of St. Louis, manager of the annual auto show, and holds a score or more of other positions that keep him busy most of the hours out of every twenty-four. As command-er of the truck expedition he added new laurels to his list, for his skilful man-agement brought the caravan through without mishap and punctual to the minute, both features being highly important in a venture of this sort.



Commander Lee, with the poster that advertised the caravan. Note inset on radiator of truck, showing exact date of arrival of trucks in each city.

Trucks That Made the Trip

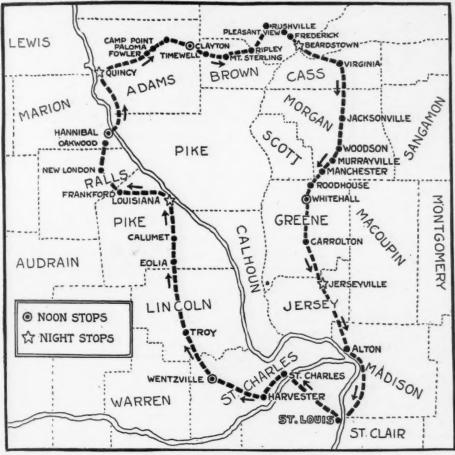
The trucks making the trip, and the firms entering them, and the managers, were as follows:

All American, two trucks, Welling Motor Equipment Co., C. A. Welling.

Maxwell, one truck, Weber Implement

& Auto Co., George Weber.

Service, two trucks, one camp trailer, Scudder Motor Truck Co., L. H. Amrine. Denby, one truck, Martin Motor Truck Co., Frank A. Martin.



The route over which the caravan passed

Diamond T, one truck, Martin Motor Truck Co., Frank A. Martin.

Fulton, one truck, Martin Motor Truck Co., Frank A. Martin.

GMC, one truck, with Delco light plant, General Motors Truck Co., C. E. Lightfoot.



H. P. Mammen, secretary and treasurer of the Traffic Motor Truck Corporation, and T. C. Brandle, vice-president of the same organization, accompanied the caravan all the way in their Packard roadster.

Autocar, one truck, with one-ton load, Autocar Sales & Service Co. of Missouri, J. H. Mack.

Paige, one truck, Newell Motor Car Co., J. E. Newell.

Master, one truck, Barth Motor Car Co., J. D. Barth.

International, two trucks, International Harvester Co., H. L. Bristow.

Dearborn, one truck, Aldrich-Stephens Motor Co., C. A. Aldrich.

Hudford, three trucks, Aldrich-Steph-

ens Motor Co., C. A. Aldrich.
Republic, F. C. Meyer Motor Co., F. C. Meyer.

Nash, one truck, Nash Motor Car Co., S. W. Ramsey.

Bethlehem, one truck, Bethlehem Mo-

tor Sales Co., George A. Blistain. White, one truck, Firestone Tire &

Rubber Co., S. C. Rudisell.

Dorris, one truck, Dorris Motor Car Co., J. T. Rumble.



C. E. Lightfoot, chair-man of Motor Truck Bureau of the St. Louis Dealers' Association, who went all the way. Frank A. Martin, a member of the Motor Truck Committee, who went only part of the way.

Manager Harry G. Moock, of the National Automobile Dealers' Association, who suggested the trip.

J. T. Rumble, sales manager Dorris Motor Car Company, who rode the Dorris Truck all the way.

J. H. Magna, of St. Louis Federal agency, was one of the most enthusiastic workers on the trip.

Lieut. L. H. Amrine, who undoubtedly rendered invaluable assistance in handling the expedition.

Traffic Truck, two trucks, loaded with baled straw, Traffic Motor Truck Corporation, T. C. Brandle and H. P. Mammen.

Reo, one truck, Kardell Motor Car Co., J. C. Kardell.

Clydesdale, one truck, Midwest Motor Car Co., H. W. Leigh.

Oldsmobile, one truck, De Luxe Automobile Co., P. H. Brackman.

Federal, one truck, Federal Truck Co., Allen Baker.

Packard, four trucks, Packard Missouri Motor Car Co., P. S. Russell, C. A. Bothell.

Pierce-Arrow, one truck, B. F. Good-rich Co., W. C. Dodd.

Sidelights on the Tour

Two airplanes were to have preceded the tour each day, furnished by the Service Motor Truck Co., who recently instituted quick delivery of repair parts by airplane express. The untimely death of the pilot of one of the planes put a stop to this plan, however.

One of the greatest results of the trip was in the way it brought the St. Louis dealers together. They got acquainted fast on the tour, and will work together better than ever from now on.

Over half of the drivers had served in some branch of the service in the big war, and their experience and knowledge of the necessity of discipline was a big factor in making the trip a success. They were a splendid bunch of men, and expert drivers, all. There was no friction from start to finish.

The trucks took different positions each day, so that all had a chance at the head of the column.

T. C. Brandle, vice-president, and H. P. Mammen, secretary and treasurer, of the Traffic Motor Truck Corporation, accompanied the caravan in their Packard roadster. At Timewell, the big Dorris truck yanked a farmer's wagon out of a mud hole, where it had become bogged. It had a filled water tank aboard, and was stuck tight.

J. T. Rumble, sales manager of the Dorris Motor Car Co., went all the way on the Dorris truck.

Many of the trucks were fitted with pneumatic tires. They found going easy.

The Goodyear Tire & Rubber Co. sent "Jack" Poland along with the tour, and

the St. Louis dailies accompanied the tour and sent in long stories each day. Two Chevrolet cars were purchased for the trip and used as guest cars, and the Packard Company furnished a touring car to bring up the rear of the caravan, in charge of E. F. Bredenkoetter, an expert truck man, to render any assistance needed along the route. Two scout motorcycles with side cars were used.

The roads were both good and bad, mostly rather bad. No deep mud was



W. L. Patterson, who drove the pilot car all the way; Commander Robert E. Lee and Manager Harry G. Moock, of the N. A. D. A., in St. Louis at the close of the trip

Poland had a truck load of tires to fit every car in the procession. He even furnished a new tire for the scout motorcycle when that went bad. Some service.

The rest of the country will have to hand it to the St. Louis truck men for putting over the first big truck tour.

A Lathrop fog horn, such as is used on windjammers during heavy fogs at sea, was mounted on the Aldrich-Stephens entry and awakened the countryside for miles around as the caravan wound into the various cities along the way.

The pilot car was a Jeffery, donated and driven the entire distance by W. L. Patterson, of the St. Louis Motor Service Co. The press car was an Olympian, furnished by the Olympian agents in St. Louis, and a special writer from each of

encountered, but in several places the trucks came through wet roads.

H. R. Brush, president and general manager of the Hudford Company of Chicago, went the entire distance on the Hudford entry, a 1909 Locomobile fitted with a Hudford truck maker.

Joseph R. Power, truck sales manager of the Nash Sales Co., Chicago branch, went part way on the trip.

The Jerseyville Motor Co., at Jerseyville, Ill., threw open its shower baths to the men of the expedition, and let them know by distributing cards that they would be welcome. They used the baths in large number.

An entry fee of \$25 per truck was charged all entrants. This defrayed all expenses of the trip easily.

Chassis Now Classed as Automobile

The Treasury Department has published a modification and addition to regulations No. 47 under section 900 of the Revenue Act of 1918 to the effect that a truck chassis is an automobile and not a part. This is retroactive to February 25, 1919.

Accordingly the manufacturer must pay a tax on all chassis sales (trucks at 3 per cent., others at 5 per cent.; except direct sales to a state or its subdivisions) and pass the tax on to the buyer. If this buyer further manufactures the article by adding a body, he is a manufacturer of automobiles or trucks as heretofore and must pay a manufacturer's tax to the Federal Government. He may take as a credit, however, against the tax he is required to pay the Government and which is figured on his selling price, the amount of the tax paid by the manufacturer on the portion of the completed article he manufactured, which tax was passed on to him. For

example, a dealer buys a chassis from the manufacturer for \$400 and a body from a dealer for \$200; he unites the two and sells the completed automobile for \$700. He is responsible to the Government for a \$35 tax, if it becomes a passenger automobile, or a \$21 tax if it becomes a truck, but pays to the Government only \$15 on the passenger auto, or \$9 on the truck, since he is entitled to credit for the \$20 paid by the manufacturer to the Government on the passenger chassis or \$12 on the truck chassis and passed to him.

Motor Transport Day in Washington

WASHINGTON, June 29.—Coincident with the first "flash" that the German delegates had appended their signatures to the treaty of peace, a great motor truck pageant in the District of Columbia demonstrated to the thousands of persons who lined the curbs of Pennsylvania Avenue yesterday the value of the motor truck, not only as an instrument of

warfare, but as a potent factor in building a permanent peace.

Heading the procession was a representation of trucks from the Army Motor Transport Corps. Scores of "gas hounds," the lads who carried food and munitions to the soldiers in the front line trenches, manned the lumbering trucks, demonstrating how these vehicles contributed toward winning the war. And to emphasize it further were two of the captured German motor trucks that the Huns once hoped would rumble their cumbersome way into a humble and defeated Paris.

Coal trucks, meat trucks, representative trucks of the various dealers were in line, all gaily decorated. Prizes were awarded to six concerns for the best showings.

The parade was conducted under the auspices of the Automotive Trade Association of Washington, the officers of which are: President, Rudolph Jose; vice-president, C. Royce Hough; secretary, C. H. Warrington, and treasurer, E. J. Quinn.

The Need of Rural Motor Express Lines in Northern New York

The Reason Why Some Motor Truck Dealers Are Not Putting Over the Rural Motor Express is Specifically Stated in This Article. Read It.

By C. P. SHATTUCK*

ROY, N. Y., June 20.—Motor truck dealers, including subagents, distributors and factory branches, are not taking advantage of the wonderful opportunities existing in the Hudson River valley for the establishment of Rural Motor Express routes and the resulting truck sales. This contention is based on a careful analysis of the territory on both sides of the Hudson River, between New York City and Troy.

The writer talked with all classes of farmers, from the owner of a few acres, who occasionally drives to market, to the owner of large fruit farms, some of which produce as high as 10,000 barrels of apples. The majority, including many

who sell their fruit long before it is ready for market, were in favor of the use of the motor truck for transporting their products to the market and to various shipping points. Buyers from the city visit the fruit growing sections and purchase the entire orchard. In some instances the buyers pick the fruit and barrel it, as well as haul it to the nearest shipping point. Other buyers contract with the fruit grower to haul the barrels to the railroad or boat.

In addition to fruits there are large quantities of underground vegetables such as potatoes and turnips, particularly the late or fall

varieties. Their transportation to the market or storage places by trucks is feasible and is a field that should be developed by the Rural Motor Express operators. This is particularly true of the small producer, the farmer whose output is not sufficiently large to warrant his investing in a motor truck and who has made a practice of disposing of his apples, etc., to the hucksters. The huckster is a keen buyer and he has two good buying arguments, cash and relieving the grower of marketing. As a rule the farmer does not obtain even a fair price for his products.

*This is the fourth of a series of articles by Mr. Shattuck dealing with the Rural Motor Express. Another will appear in an early issue.

The writer found that two things have sold the farmer on the Rural Motor Express plan. One is the possibility of obtaining a better price, and the other the more rapid transportation afforded by the truck. Better prices are possible because, with the truck affording an outlet, the small producer can eliminate the huckster or gyp buyer and ship direct either to the cities or to the commission man. There is still another angle,-the possibility of selling on what may be termed a high market. This condition is closely linked up with the transportation, for with the Rural Motor Express truck's daily service a producer can get his products to the market when the demand is greatest. This is not possible when shipping by the common carriers, for apples,

The New Market Opened Recently at Watervliet, N. Y.

A very small number of trucks are used. A dealer seeking prospects should visit
this market, provided he will arise with the chickens

etc., are shipped by freight which requires several days and express railroad service is too costly. There is another factor favoring the truck and that is that the perishable vegetables and fruits arrive at their destination in a better condition, and so they bring better returns to the farmer.

The Buying and Selling Plan

The writer spent a couple of days in Albany and Rensselaer counties with the head of a company operating a fleet of motor trucks in highway transportation. He is a farmer and well acquainted with the producers in the sections visited. The majority of the farmers were called on and questioned concerning the practicability of establishing a truck service.

All were asked whether it would be more advisable for the farmer to ship to the commission man or to sell outright to the truck operator. The majority favored the purchasing plan although some preferred shipping to the market. The investigation developed the information that the truck operator, wishing to develop business, should have but one buying price for all; that is, a price for graded and first class products and another for seconds or not graded goods. It was also suggested that the plan would teach the farmer the value of graded products and the advantage of proper packing, etc. These features have an indirect bearing upon the success of the Rural Express, and the information should prove of val-

ue to the dealer endeavoring to sell the prospect interested in establishing Rural Motor Express lines.

Why Dealers Fail on Rural Express

Mention has been made that the truck dealers in the Hudson River valley are not taking advantage of the wonderful opportunities to develop Rural Express lines. writer called on the majority of dealers in the cities and towns on both sides of the Hudson between New York City and Troy and found very, very few who were sold on the plan. A few scattered cases were noted where a dealer had sold a

truck that was being used in a combination Rural Express and general express business, but none of the sales had been made to a Rural Express prospect. In practically every sale investigated the owner of the truck had developed the Rural end; that is, the carrying of general merchandise to the farmers. Few salesmen had made any effort to induce the farmer to ship farm products to the city by truck.

The real reason why the Hudson River truck dealers are not putting over the Rural Motor Express is because they are not sold on the plan. Insofar as could be ascertained in interviews, none had made any attempt to develop the fertile field and the majority were not alive to the possibilities of selling the farmer. In

a number of instances the sales made in agricultural sections were due to the merchandising efforts of the distributor or factory branch representatives who closed the prospect. In the majority of instances the dealers referred to are passenger car dealers who took on trucks during the war and are attempting to merchandise them as they do the former.

Putting the Rural Express Over

Ulster County is an example of neglected opportunities. The county intowns including Hurley, Stone Ridge, Accord, Kerhonkson and Wawarsing. Through arrangements made with shippers from New York, and out of town, their goods are shipped by boat to Kingston, unloaded and loaded on the truck and distributed over the route mentioned. The smaller truck is employed to pick up and deliver in and around Kingston. The Brockway is used to haul between Kingston and Ellenville. Whenever the volume of merchandise warrants it the big truck is sent to the boat or to the

store of the shipper, mostly wholesalers supplying the towns served by the truck,

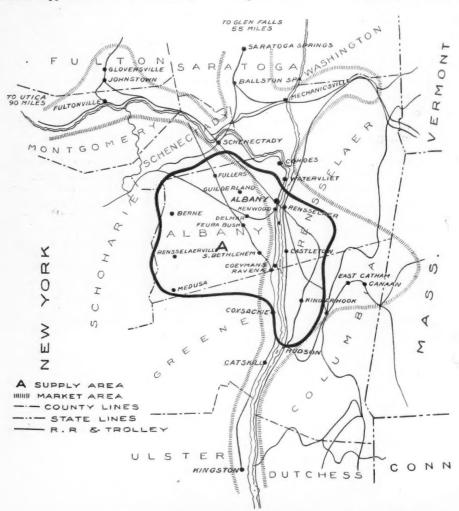
Lacked Service to New York

The Brockway has been operating on the out trip with capacity loads but Mr. Hornbeck's problem was developing the return business. While it is true he obtained shipments for New York from a paint company and an umbrella handle manufacturer in Ellenville and vicinity, the truck was not operating efficiently on the return trip. Some potatoes were hauled last fall. This spring large quantities of cheese were shipped by truck which hauled as high as 10 tons one week. To encourage shipment by truck Mr. Hornbeck purchases butter of the farmers and retails it in Kingston and has disposed of as many as 250 lb. a day.

Although the volume of business on the out trip increased and could be developed to such an extent that another truck could be used, Mr. Hornbeck did not deem it good business to start another truck until the return load end was developed. He found that a number of shippers would take on the truck service provided arrangements could be made for a store door delivery in New York City. Mr. Hornbeck informed the writer that the volume of eggs shipped to New York City by express from Accord and vicinity if diverted to motor trucks would keep one truck busy, but lacking connection and delivery at New York he had not attempted to sell the farmers the plan.

Selling the Farmer the Service

Not only was Mr. Hornbeck anxious to obtain this egg business but he desired to open a Rural Express route in the fruit and vegetable sections of the coun-The representative of the Farm Bureau in Kingston was visited and an appointment made to discuss the plan with the members of the executive committee of the Farm Bureau. The meeting resulted in the Farm Bureau's representative inviting Mr. Hornbeck and the writer to address the farmers of Accord and vicinity at a special meeting. In the meantime Mr. Hornbeck was put in communication with J. Kent Warden, owner of the Long Island Rural Express. Mr. Warden, a live wire, saw the possibilities of co-operating with Mr. Hornbeck.



Showing the Supply and Market Areas and Indicating a Field of Undeveloped Possibilities for the Sale of Motor Trucks

cludes large fruit growing areas, garden truck farms and poultry farms from which large shipments of eggs are sent to New York. There is also dairy farming, one concern shipping tons of cheese to New York. The greater part of the products are shipped to New York by one of the two railroads, although some producers, adjacent to the Hudson River, ship by boat, a steamer leaving Kingston for New York.

The writer found one Rural Motor Express operating, the Ulster County Rural Motor Express. This line was opened by Scott D. Hornbeck, formerly of New York City. Two trucks are being used, a 2-ton Brockway and a 34-ton Oldsmobile, the former being employed between Kingston and Ellenville, 32 miles from Kingston and serving the intervening



The Oldsmobile Pick-up Truck Transferring Its Load to the Brockway. Used for the Long Haul by the Ulster County Rural Express

The meeting at Accord was a characteristic gathering of farmers. About forty were present, including large and small shippers of eggs. Mr. Hornbeck outlined his plan for transporting the eggs by truck to the boat and introduced Mr. Warden as the man whose trucks would pick up the eggs at the boat and deliver by truck to the commission houses, a store door delivery. The writer also explained the operation of the Rural Motor Express, its principles and its advantages to the farmer, etc., and suggested that the plan be given a trial. After much discussion the farmers agreed to try out the plan.

Possibilities for Trucks

The truck service appealed to them and was sold because of the losses they had sustained through shipping by express and the fact that the operators of the truck service guaranteed prompt and satisfactory adjustment of damages and losses. At the time this article was written word was received that the service had been inaugurated and prospects were bright for obtaining the bulk of the shipments. A receiving station has been arranged for at Accord, one of the biggest shippers of eggs acting as agent. Some idea of the volume of business may be obtained from the statement that as many as 250 cases of eggs a day are shipped from this territory.

To Open Another Route

Encouraged by the success attending his efforts, Mr. Hornbeck decided to inaugurate another route and to serve the fruit and vegetable districts south of Kingston. He proposes to start a truck over the route marked number 2 in the accompanying map, collecting farm products and shipping by boat to the Long Island Rural Express, which will deliver to the commission houses. The plan includes a personal presentation of the service to each farmer and to the city merchants supplying the districts to be served by the truck.

Charge Express Rates

It is believed by some that when the truck is competing with the express com-

panies, as is the Rural Express from Accord, that it is essential to give the shipper a better rate. It is a fine selling point, particularly with the farmer, but it is interesting to record that the Ulster County Rural Express is to charge the same rate as the express company. At the Accord meeting the chairman hinted that a lower rate would sell the service, but Mr. Warden very tactfully pointed out that he was selling high grade transportation and ignored the common carriers entirely in his arguments favoring the truck.

An Undeveloped Field

Albany and Rensselaer counties, as well as those adjacent to these, afford excellent opportunities for merchandising motor trucks both to the farmers and to dealers having prospects interested in the possibilities of the Rural Motor Ex-

ucts to market and for shipping via rail to New York. There is a proposed connecting link between the river and inland rail lines but those familiar with conditions state that it will be many years before construction will be attempted.

Farmers Are Prosperous

Similar conditions obtain on the east side of the Hudson, in Rensselaer county. The areas are rich farming sections, producing fruit as well as garden truck and vegetables. By rich is meant sections producing a large volume and owned by well to do farmers who could be sold motor trucks, as some have, if the dealer would analyze the farmer's requirements.

Only a small percentage of the producers in the sections referred to are using trucks and those with whom the writer talked on the markets at Albany



The Brockway Truck of the Ulster County Rural Express Carrying a Consignment of Cheese to New York City. Ten Tons Were Hauled in One Week

The truck is favored over the railroad, as the cheese reaches New York quicker and in better condition

press. Albany county is not well served by the railroads insofar as providing a good outlet for farm products. The West Shore railroad practically follows the Hudson River on the west of that body of water and this carrier has a junction at Ravena with another branch that almost parallels the line of another common carrier. Between these and to the west of the Ravena branch line farmers rely upon horses to get their prod-

and Watervliet said, in discussing the use of trucks on the farm, that they had proved invaluable, especially during the shortage of labor during the war. Several stated that many trucks would eventually be used and that the establishment of Rural Express routes by men familiar with farming and marketing would receive the endorsement and support of the farmers, particularly the owner of the small farm who could ill afford to spare the time required making the haul to market with horses.

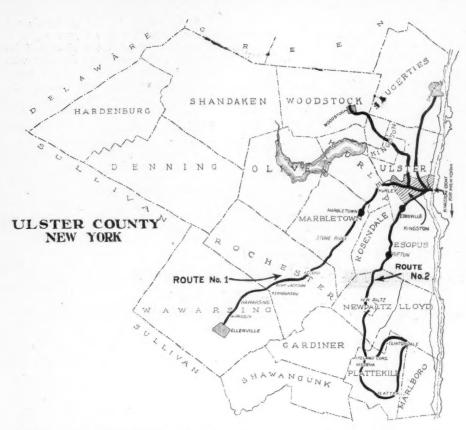
There are one or more trucks being operated on the rural express plan in Albany county, but these serve the milk sections and do not function as a true Rural Express in that they confine their efforts to one product and are the results of co-operative milk marketing by a league, as explained elsewhere in this issue.

Must Adopt Early Rising Habit

No effort has been made by the truck dealers in and around Albany to develop the Rural Motor Express, although the Farm Bureau of that section informed the writer it was anxious to co-operate with any dependable company desiring to establish lines. The failure of the dealer to grasp the opportunities afforded by the agricultural fields may be ascribed to



A Combination Bus and Express Line Operating Between Kingston and Woodstock It functions as a rural express in that it carries supplies to farmers and shops for them



Map Showing Route Established by Ulster County Rural Express and Line to be Opened

the fact that the average salesman cannot be persuaded to get up before the sun rises and visit the public markets at Albany, Troy and Watervliet, where hundreds of farmers during the marketing seasons dispose of their products long before the truck salesman thinks of getting out of bed.

Barrels of Prospects

If the truck dealer wishes leads, desires to become familiar with the requirements of the farmer insofar as transportation is concerned, let him be at the market before sunrise, say not later than five, as the writer has done. A live wire salesman will obtain data, to say nothing of leads, that will develop into sales. Getting acquainted with the problems of the producer will prove valuable assets in selling trucks and, incidentally, one can secure information on which he can cash in in the Rural Express field.

If the city truck dealer does not incline toward the early rising plan there is another alternative, one that is practical and that was put in operation by the writer in Ulster county and in Albany, and that is, selling the established trucking companies the idea. But to do this the dealer must understand the fundamentals of the Rural Express and advise the truck owner how to proceed if the latter be not familiar with the subject.

Will Start Rural Express

To test the practicability of the plan the writer called on H. A. Van Ostenbrugge, head of the Sterling Motor Truck Corp., which concern is operating a fleet of 51/2-ton Mack trucks between Albany and New York City, and the result was that Mr. Van Ostenbrugge spent a couple of days calling on the farmers and fruit growers in Rensselaer County, with the result that he is perfecting arrangements to start a Rural Motor Express line on the east side of the Hudson, which will cover a circular route of approximately 40 miles. The New York markets will be served by an arrangement with the Hudson River Navigation Company, which operates between Albany and New York, and the plans include the establishing of a terminal in New York City and distribution by trucks.

Opportunities for Sales

There are numerous express companies operating trucks out of Albany and other cities along the Hudson river that could be interested in the possibilities of the Rural Motor Express, in transporting farm products. The majority of these, while occasionally filling orders for farmers along the route, depend upon the hauling of general merchandise for profit. With a good boat service, such as provided between Troy, Albany, Kingston and New York, and with a distributing company in the last named city, sufficient business could be developed in the farming areas on each side of the Hudson to warrant many of the trucking companies adding to their equipment, which means, of course, sales for the dealer who can merchandise the plan.

It may be contended that a dealer in directing the efforts of a customer along these lines will not make sales but rather will be teaching his customer to operate on the return load principle. If the efforts of the dealer results in nothing more than increasing the earnings of the trucks he will have accomplished a great deal towards the success of highway motor transportation, which means capacity loads both ways. The successful dealer of the future will be the man who is broad minded, who realizes that the success of his customers is his success. The repeat order, so desired by the salesman, is very possible by exploiting the Rural Express service among established transportation companies, the majority of which will require a different capacity truck than now used by them to serve the agricultural districts.

In both instances cited, that in Ulster and Albany counties, the successful establishment of the Rural Motor Express lines means that some live wire dealer is going to sell these companies some trucks if they have not been sold by the time this article appears in print.

A. E. F. Holds 126,136 Vehicles

NEW YORK, June 18.—According to an analysis given by C. C. Hanch, secretary of the National Automobile Chamber of Commerce, in his report after his recent trip abroad, the American Expeditionary Forces hold 126,136 motor vehicles, trailers and bicycles.

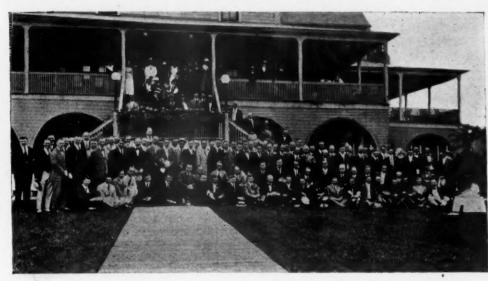
Of this number, the report states, 7368 were of foreign make, representing our purchases in Europe, practically one-half of which were motor trucks. We have on hand 10,110 American and 41 foreign light-delivery trucks; 12,651 American and 681 foreign ½ and 2-ton trucks; 19,285 American and 2603 foreign 3 and 4-ton trucks, and 2696 American and 78 foreign trucks, all of them of 5 tons capacity and over.

Lyons to Hold Two Fairs Next Year

PARIS, June 1.—The management of the Lyons Sample Fair has adopted a new policy and will hold two fairs annually hereafter. The spring fair will be held in March and the autumn fair in October. A division of exhibits has been arranged so that no buyer need visit the fair twice in the same year. Automobiles will be exhibited at the spring fair.

Ship Red Star on Air Deliveries.—Auto Components, Inc., Chicago, Ill., states that it shipped the first automobile part to be delivered by airplane mail on May 21. The airplane carrying the timer left Chicago at 9.30 A. M. and arrived in Cleveland at 1.15 P. M. It was delivered to the office of the Pennsylvania Rubber Co., at 1.50.

Problems of Peace Engage Attention of S. A. E.



Fuel Problem and Its Effect on Future Design Come in for Consideration. Effect of War Lessons Also Discussed

By T. F. CULLEN

TTAWA BEACH, MICH., June 27.—Both in attendance and in educational value the 1919 summer meeting of the Society of Automotive Engineers, now coming to a close here, after a five days' session, must be considered the most successful of its kind ever held by the Society. Over 1000 members and guests were present.

At the professional sessions held during the mornings, commencing Tuesday, June 24, a number of technical subjects of particular interest to the membership of the society were discussed, including such problems as motor truck ability and its relation to trend of truck design; motor fuel problems; protective coatings for metals; working processes of future combustion engines; relation of tractor

to implement; electric heat treatment of steel, etc. In addition there were papers on the use of the Liberty engine materials in the automotive industries; the load carrying possibilities of angular contact type ball bearings; development of the N. C. flying boats and other naval aircraft, and on the future relations between the automotive industry and the various army departments.

Popular lectures were given in the evenings on such subjects as wireless telephony, gas warfare, and on the experiences of army officers with the A. E. F. and the Armistice Commission.

Sports and recreation of all kinds played a prominent part at the meeting, the afternoons generally being devoted to sports, while the mornings were given over to the professional sessions. In the

evening the illustrated lectures were given, and there was also dancing, moving pictures and other entertainment.

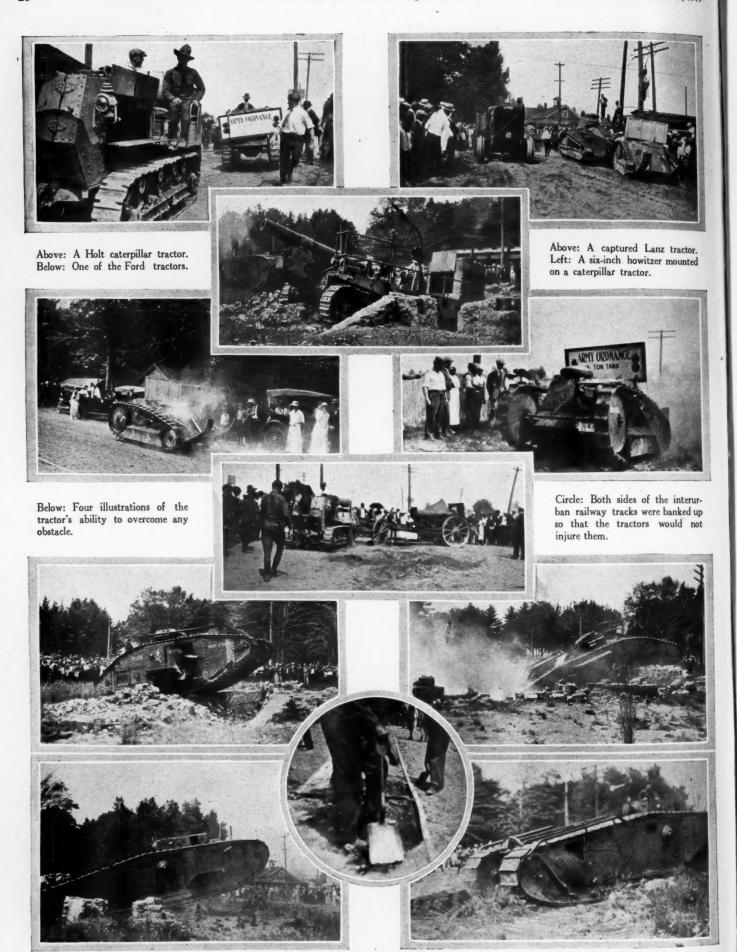
The various divisions of the Standards Committee presented their reports at the first session held Monday morning, June 23. The recommended standards which are of particular importance to the commercial car field are reproduced in full elsewhere. These standards were approved by Standards Committee Council and by the Society at a business meeting. Before they can be finally adopted as S. A. E. standards, however, it is necessary to obtain the approval, by means of a letter ballot, of all of the voting membership of the society, which will take from 30 to 50 days.

Through the courtesy of the War Department a large exhibit of automotive

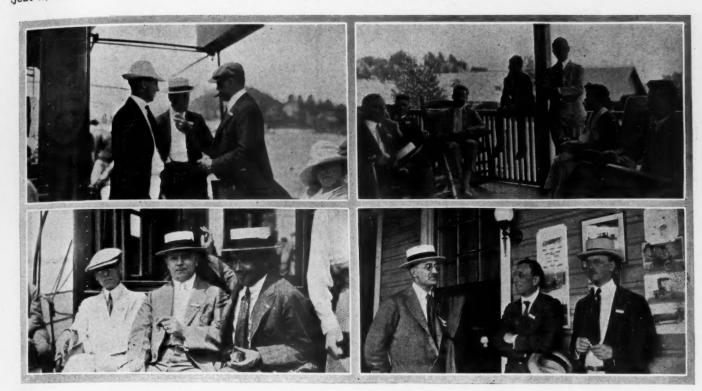


Above: A German Tractor in Disgrace

H. L. Horning, Lt. Col. A. J. Slade and Others Discuss German Trucks.



Some feats performed during the demonstration on Thursday afternoon, when tanks and tractors were given the opportunity of exhibiting their prowess



On the Boat and on the Porch

At the upper left: Clarkson and Dabney talk things over on the way to the military demonstration; below them, from left to right: Palmer, Keilholtz, and Goddard; at the upper right, on the veranda, from left to right: Dixon, Neerken, Tice and his son, Rice, Mrs, Tice and Jehle; at the lower right: J. G. Perrin, F. E. Cardulla, and Dr. J. E. Pogue.

war material including guns, tanks, tractors, trucks, field repair units and similar material, was held at Jenison Park across from Ottawa Beach. This exhibit was open throughout the meeting of the S. A. E., and on Thursday afternoon, June 26, a demonstration was given in which some of the larger tanks, tractors and a field gun mounted on a caterpillar tractor, were put through their paces.

The fancy dress parade, held on Wednesday evening, including two unexpected features, one being a barefoot dance by some of the husky members of the Mid-West section, and the other the funeral of John Barleycorn, attended by members of the Pennsylvania section dressed as miners.

Ottawa Beach proved to be an almost ideal meeting place. It is somewhat secluded and thus gave the members an

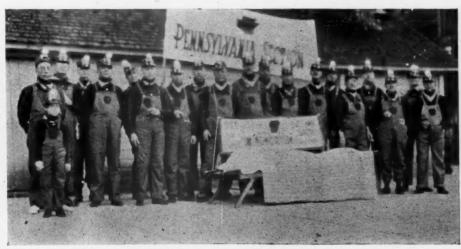
opportunity to get together in much the same way as they did in previous years when the summer meetings were held aboard ship. At the same time, it is readily accessible from the larger cities. In addition, the facilities for outdoor sports were much better than would be possible aboard ship.

Weather conditions throughout the meeting were almost ideal.

The Engine-Fuel Problem

Estimated Crude Petroleum Reserves Will Last Only About Twenty Years, Even at Present Rate of Consumption

The following extracts from a paper presented before the S. A. E. at its summer meeting by Joseph E. Pogue, of the Division of Min-Technology, era1 United States National Museum, Washington, D. C., gave the automotive engineers an idea of the motor car fuel situation as it is today, and showed the advisability of perfecting present day engines so as to conserve the fuel supply as much as possible, and also of develop-



The Pennsylvania Section Just Before They Buried King Booze
Germain, Jr., leading the procession

ing new types of engines to run on entirely different fuels and thus open up new sources of fuel supply.

The automotive industry faces the question: What steps, if any, can be taken to insure an ample supply of engine fuel at a price favorable to the continued growth of automotive transportation? The production of gasoline is increasing more rapidly than the production of its raw material, crude petroleum;



and the available supply of crude petroleum is very limited, in view of the size of the demand. With an annual con-

sumption of approximately a third of a

billion barrels, this country has reserves

estimated by the United States Geological Survey scarcely to exceed seven billion barrels, or not more than 21 years'

supply, even at the present rate of consumption; while the deposits of Mexico and Central and South America, which

are already being called upon to supple-

ment our domestic production, are being

hastily exploited as sources primarily of

fuel oil, and therefore unavailable direct-

Recent growth of means for increasing

the gasoline obtained from a given quan-

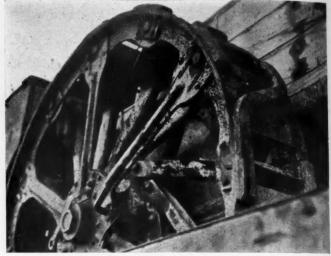
tity of crude petroleum, such as blending

ly for gasoline production.

Waiting for the Ferry; Not the Fairies

The decreasing volatility of gasoline is a fact that must be faced irrespective of all other considerations.

The automotive industry has an unescapable concern in the problem because the highly specialized fuel requirements of the prevailing type of automotive ap-



The Peculiar Pressed-Steel Driving-Wheel Construction on German Military Tractor.

high volatile gasoline from natural gas with distillates too heavy to rank alone as gasoline, cracking fuel oil into gasoline and lowering the volatility of commercial gasoline so as to enlarge the gasoline cut, indicates a tightening-up stage in the production of gasoline as the output of crude petroleum falls behind the demand for engine fuel.

paratus limits the quantity of engine fuel that may be commercially produced from the output of crude petroleum.

Thermal efficiency of engines has a pivotal bearing upon the quantity and price of engine fuel. Every gain in thermal efficiency means a corresponding increment to the fuel supply. Increased thermal efficiency may also be made to



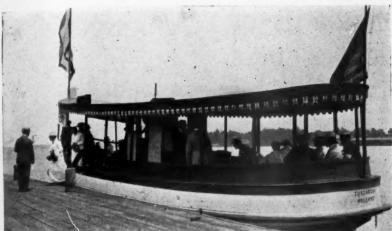
Views of the Hotel and Porches



It Will be Noted That Some of the Younger Generation Were Present.







The truck was then operated on kerosene, with the surprising result that only 5 gal. 1½ pt. were used or 1 pt. more than when running on gas. These results were obtained by reducing the compression to 60 lb. and operating the truck at 5½ to 8 m.p.h., although geared for 16 miles. The exhaust was clean and there was no pound. He particularly emphasized the fact that a very high gear ratio often means less actual ton miles of work per day, that idling of the engine greatly increases fuel consump-

compensate the consumer for such advances in fuel prices as may develop.

The most effective (immediate) means for expanding the supply of gasoline is through rapid development of "cracking" methods of refining whereby gasoline is made from fuel and kerosene. "Cracking" is enmeshed, however, with the counter expedients of adapting the present type of light engine to burn an increasingly heavy fuel, developing heavy oil engines for heavy, slow-traction portion of automotive transportation.

The matter of supporting resources—benzol, alcohol, shale-oil distillate, mixed fuels—which, in part at least, will soon be needed to supplement the supply of fuel of petroleum origin, is likewise not a thing apart from automotive developments. The production of these products may be counted upon as need arises for them, but if the engine does not evolve in a direction fitting the new fuels, a retardation will thereby be given new sources of fuel supply, inimical to the interests of the automotive industry.

At the present time the newly formed American Petroleum Institute, representative of the oil industry, has under advisement the establishment of an agency of contact and co-operation with the automotive industries.

The Tuesday session was largely devoted to the discussion of the fuel situation. In fact, there was a leaning in this direction at all of the sessions. In general, it may be said that there is a very optimistic feeling on the part of the engineers that the trend of design will keep sufficiently in advance of the grad-



H. L. Horning



The Boats

The small one at the left carried passengers across the lake to the Waukazoo Hotel; the larger one at the right is loading passengers for the military demonstration

ually lowering standard of fuels so that the industry will not be affected.

The paper of Louis P. Kolb on the "Relation of Motor Truck Ability to the Trend of Design," and Dr. Joseph E. Pogue's paper on "Motor Fuel Problems" were the nuclei of the discussion.

H. L. Horning brought out some interesting facts concerning a test of a twoton truck over a course 16.8 miles in length, including macadam, dirt and grades up to 9 per cent. and a stretch of two miles of crushed stone. In these tests a combination heated manifold was used with splendid results considering the engine was of course greatly reduced by preheating the charge. Nevertheless,



President Charles M. Manly

the road performance was markedly imthe fact that the volumetric efficiency of proved, the fuel consumption being reduced from 7 gal. to 5 gal. and ½ pt.

tion, facetiously pointing out that in cities with most saloons the fuel consumption was greatest and that July 1st would help solve the fuel problem.



B. G. Koether Chairman of the Contest Committee

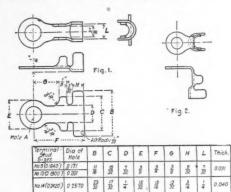
Horning recommended the use of a good governor, which will shut off on hills when coasting and also tabooed a very high head on the gasoline due to a raised tank location, stating that the carburetor overfills and is wasteful of fuel.

Some of the S. A. E. Standards of Interest to Motor Truck Designers

The Following Standards Are Proposed by the Various Divisions of the Standard Committee for Adoption by the Society as S. A. E. Standards. While They Have Been Approved Substantially in the Form Given Here, by the Standards Committee, by the Council and by the Society at the Regular Business Session, They Cannot be Considered as Finally Adopted Until Approved by a Letter Ballot to All the Voting Membership, Which Will take From Thirty to Sixty Days.

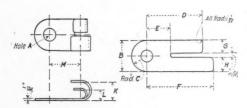
Cable Terminals for Generators, Switches and Meters

Recommendations for S. A. E. Standard cable terminals are given below:



material- To be Specified by User-

NOTE:- The Terminals as Formed in Fig. 1. may also be Formed as shown in Fig. 2.
These Terminals are not intended for Use on Ignition Distributors.



Terminal Stud Sizes.	Dia. of Hole.	В	Rad	D	Ε	F	G	Н	K	L	М
NO 8 (0.15407)	0.171	3	3/6	19 32	5 16	3 4	18	5 32	<u>5</u> 32	5	32
Na 8 (0.1640°) Na 10 (0.1900°)	0171	13 32	13 64	43 64	<u>5</u> 16	27 32	1/8	3/16	3/6	3/32	3/00
No 14 (0 2420°)	0 2570	1/2	4	27 32	3	132	3 16	7 32	1/4	1	1/2

Material-Tobe Specified by User.

NOTE:- These Terminals are not intended for Use on Ignition Distributors.

Barrel Mounting for Starting Motors

A revision of the present Recommended Practice for Barrel Mounting for Starting Motors (See page 36da., S. A. E. Handbook, Vol. 1) is recommended by the Division.

This revision consists in providing definite limits for the gear location of the starting motor with respect to the flywheel, a pitch line clearance of 0.015 to 0.025 instead of 0.015 in. being recommended.

Lens Sizes, Approved, to Become Effective July 1, 1921

There are more than 80 lens diameters being used, over 25 of which are in most general use. It is believed that the fol-

lowing proposed standard sizes will cover the necessary range of sizes for automobile electric headlamps and prove of value to the industry.

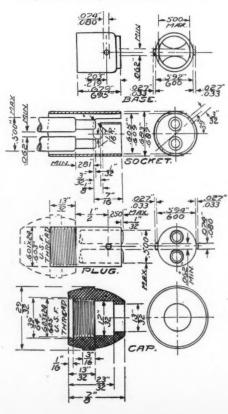
Ot	itsi	de Dia	am.	Diam.	of i	Prism
	of	Lens		A	\re	a
81/8	+	1/32,	-0	67/8	+	1/32
81/2	+	1/32,	-0	71/4	+	1/32
9	+	1/32,	-0	73/4	+	1/32
91/2	+	1/32,	0	81/4	+	1/32

Thickness of bevel edge for all sizes is to be ½ in., plus 1/32, minus 0. This is commonly known as double thick American glass.

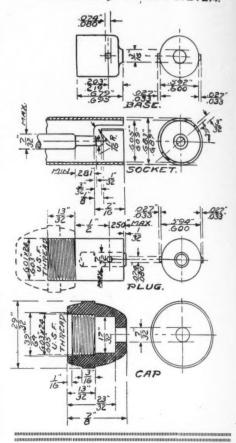
Bases, Sockets and Connectors

The Division recommends for adoption the following specifications for bases, sockets, plugs and caps for insulated and ground-return systems (double and single contact bases, sockets, etc.) These revisions will bring the S. A. E. Standards in line with present practice and make them more complete by including essential dimensions not previously standardized.

ELECTRIC BASE, SOCKET, PLUG & CAP FOR INSULATED-RETURN SYSTEM.



ELECTRIC BASE, SOCKET, PLUG & CAP FOR GROUND-RETURN SYSTEM.



Flexible Metal Tubing

At the present time flexible metal tubing is in general practice supplied to the trade in diameters varying by 1/32 in, and closer in some cases, for sizes ranging from 3/4 to 4 in. The tubing thicknesses vary from 1/32 to 1/16 in., and it is made both with and without packing.

The lack of any standard method of measuring tubing with respect to its being twisted tightly or loosely and in specifying whether or not the inside or outside diameter should be the nominal diameter, has caused considerable confusion.

This matter was taken up with the Society by the Tubing manufacturers, and the Division, after careful consideration, recommends the following for S. A.

E. Standard:	
*Outside Diameter	Sizes Vary by
34 to and including 11/2	1/16
15/8 to and including 21/2	1/8
234 to and including 4	1/4
*As received from the t	ubing manufac-

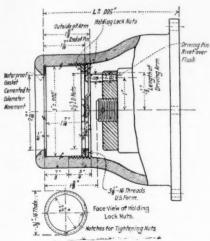
turers, and not twisted tightly or loosely. Hub Odometers for Trucks

Work on this subject was first considered in connection with the mounting of hub odometers on military trucks. The present recommendation is an outgrowth of this work and is for commercial truck application.

It is not felt that a standard can be carried beyond the actual housing dimensions, method of locking the instrument into the case, and the drive method and dimensions. There are several methods

of drive in use, but the one recommended by the Division is common, of good design and open to use by anybody. The type set in from the outside is not considered desirable because of the ease with which it can be tampered with, stolen or injured.

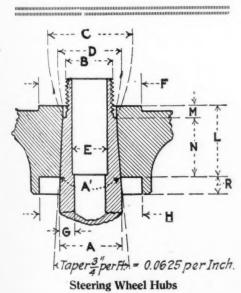
The recommendation of the Division is incorporated in the following drawing:



Steering Wheel Hubs

The Division proposes the following recommendation for S. A. E. Standard except that the key and threads are proposed for adoption as S. A. E. Recommended Practice until it is known definitely that they are satisfactory for S. A. E. Standard.

The nut dimensions in the following table, which are submitted as general information only, allow for the proper seating of the nut on the pad (diameter F.):



	6	7
A	7/4	1
A1	0.870	0.994
B	34 20	76 20
A1 B C	(0.8075)	$\frac{76}{(0.92174)}$
	0.8075	0.9217
H F L M N R	1 9-16	1 13-16
\mathbf{F}	11/2	
L	11/8	1¾ 1 5-16
M	1/8	5-32
N	1 "	1 5-32
R		7-16
D	% (0.799687)	(0.91197)
	0.7997	0.9120
E G	19-32	23-32
G	5-32	5-32

Steering Wheel Nut Seat Dimensions

Screw	Size Wall	Short Diam.	Long Diam.	F.
34-20	5-32	1 1-16	1 15-64	134
	1/4	134	1 7-16	
76-20	3-16	11/4	1 7-16	1%
	3/4	1%	1 19-32	
1 -20		1%	1 19-32	2
	7-32	1 7-16	1 21-32	
1%-18	3-16	11/2	1 47-64	21/4
	1/4	1%	1 1/8	
11/4-18		1%	1%	21/8
	9-32	1 13-16	2 3-32	
A 11	dimonniane	a implement		

All dimensions in inches, *Checking of key dimensions prevents their publication in this advance report.

Solid Tire Sizes

This subject was presented at the February meeting of the Society, but was referred back to the Division pending further consideration by the National Automobile Chamber of Commerce and the Rubber Association of America. As these organizations have definitely adopted the following solid tire sizes, the Division recommends that these sizes be adopted by the Society.

The complete table with metric equiv-

	alents 19	s as tollows:		
	Inches	Mm.	Inches	Mm.
	32×3	75/660	36 x 6	150/762
	32 x 31/2	90/660	40 x 6	150/864
	34 x 31/2	90/711	36 x 7	176/763
	36 x 31/2	90/762	40 x 7	175/864
	32×4	100/660	36 x 8	200/762
	34×4	100/711	34 x 10	250/762
	36 x 4	100/762	40 x 10	250/864
	34×5	125/711	40 x 12	300/864
6	36 x 5	125/762	40×14	350/864
6	40 x 5	125/864		

Solid Tires for Single and Dual Wheels

The division recommends the following definite front and rear wheel application of the proposed solid tire sizes as supplementary to the proposed standard:

	Tires for	Single Wheels
	32 x 3	36 x 4
	32 x 3½	34×5
	34 x 3½	36 x 5
	36 x 31/2	36 x 6
	32 x 4	36 x 7
	34 x 4	
	Tires for	Dual Wheels
36×4	36×8	(Single tire fits 36 x 4
		dual wheel)
36×5	36×10	(Single tire fits 36 x 5
		dual wheel)
40×5	40×10	(Single tire fits 40 x 5
		dual wheel)
40 x 6	40×12	(Single tire fits 40 x 6
		dual wheel)
40 x 7	40 x 14	(Single tire fits 40 x 7 dual wheel)
		- 1.5 - 1 to 201 Till II do 20

Carrying Capacity of Solid Tires

The Tire and Rim Division has approved the following recommendation in the belief that it represents good engi-

X100001110195331110533311063131101109111113333111111133	*10************************************	111101111111111111111111111111111111111
8	9	11
11/8	11/4	11/2
1.118	1.242	1.490
1.20	11/8 18	11/4 18
(1.03597)	(1.150203)	(1.37672)
1.0360	1.1502	1.3767
1 13-16	2 1-16	2 5-16
2	21/4	2% 2
1 15-32	. 1%	2
5-32	5-32	3-16
1 5-16	1 15-32	1 13-16
1/2	9-16	%
(1.02620)	(1.14044)	(1.3650)
1.0262	1.1404	1.3650
51-64	59-64	1 3-64
3-16	3-16	1/4

neering practice and presents it for adoption as S. A. E. Standard:

	Up	to and Inclu	ding
Width		36 in. diam.	40 in. diam.
3		1000	
31/2		1300	
4		1700	
5		2500	2600
6	•	3300	3500
7		4200	4500
8		5200	5600
10		7000	7500
12			9500
14			11500

Solid and Pneumatic Tire Equipment for Commercial Cars*

As it is desirable for all tire manufacturers to make identical tire equipment recommendations, this matter has been the subject of frequent discussions, and at this time the Division feels that it can present a table which will more or less summarize the result of past activities and represent good practice.

In this table in the columns headed "Maximum Weight per Wheel," the figures given are the result of very careful investigation as to actual weights of trucks in use at the present time.

	1	Rear	F	ront		
	Wt.	Tire Size	Size	Wt.	Size	Size
ruck	imum Wheel	Tire	Tire	mum Wheel	Tire	Tire
Size Truck	Maximum per Whee	Pneu.	Solid Tire	Maximum per Whee	Pneu.	Solid Tire Size
3/4	800 or	33x4 35x5	None	1600	35 x 5	None
1	1000	34x4½ or	34x3½ 36x3½	2100	36x6 or	34x5 36x5
2	1500	35x5 or	34x4 36x4			00.10
21/6	1800	36x6	36x5			
3	2000	36x6	36x5			
31/2	2100	36x6	36x5			
2½ 3 3½ 4 5	2300	38x7	36x6			
5	2700	38x7	36x6			

All pneumatic tires to be of cord construction.

*This data is submitted as general information only as representing good present-day practice.

Solid Tire Sections

The Division recommends that the 3in, solid tire sectional area be included in the present standard so that it will conform to the proposed solid tire standard.

*Minimum total sec-Solid Tire Width, tional area of rubber,

In.		Sq. Ir
3		
31/2		6.75
4		7.75
5		10.75
6		13.75
7	,	16.75
8		19.75
10		25.75
12		31.75
4.4		200 198

Note: The above values correspond to those adopted by the Solid Tire Division, War Service Committee of the Rubber Industry of the U. S. A.

*Includes both hard and soft rubber.

Solid Tires and Wheel Diameters, Wheel Circumferences

In the past there has been some confusion owing to the inclusion of general information in this standard. In view of this the Division has revised the

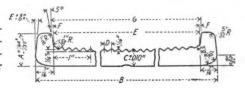
standard so as to include date on the standard solid tire diameters only and therefore recommends the following revised standard for adoption:

	Nomin	al Outer	Actual	Diameter	*Actual Circ	umference
Diameter of Tires		Over Steel Bands		Over Steel Bands		
	In.	Mm.	In.	Mm.	In.	Mm.
	32	810	26	660.4	81 11/16	2074.7
	34	860	28	711.2	87 31/32	2234.3
	36	910	30	762.0	94 1/4	2393.9
	40	1010	34	863.6	106 13/16	2713.1

*These felloe circumferences are given with the tolerances neglected. The tolerances are shown at the bottom of page 8a, S. A. E. Handbook, Vol. 1.

Base Bands for Solid Tires

As the proposed solid tire standard includes a 3-in. size, the Division recommends that the 3-in. base band be included in the present S. A. E. Standard for Base Band for Solid Tires.



Base								[F]	*Cor	rugations					
Band		A		В	Li	mits of		C					C	T	
Size						В		C	No.	D	E		G	F	
3	2	3/32	3	3/4	+	1/32		5/16	16	0.181	2 29/32	3	1/16	5/64	
31/2		3/4	4	1/4	+	1/32	1	1/32	18	0.191	3 7/16	3	9/16	1/16	
4	2	5/32	4	13/16	+	1/32		3/8	20	0.196	3 59/64	4	1/16	9/128	
5	2	7/32	5	7/8	+	1/32		7/16	26	0.189	4 59/64	5	1/16	9/128	
6	2	7/32	6	7/8	+	1/32		7/16	32	0.185	5 59/64	6	1/16	9/128	
7	2	7/32	7	7/8	+	1/32		7/16	36	0.192	659/64	7	1/16	9/128	
8		7/8	8	7/8	+	3/64		7/16	40	0.196	7 27/32	8		5/64	
10		7/8	10	7/8	+	3/64		7/16	50	0.196	9 27/32	10		5/64	
12		7/8	12	7/8	+	3/64		7/16	60	0.197	11 27/32	12		5/64	
14		7/8	14	7/8	+	3/64		7/16	70	0.197	13 27/32	14		5/64	

Note: The above values correspond to those adopted by the War Service Committee of the Rubber Industry of the U. S. A.

*Either mill corrugated or dovetail facings may be used.

Section Dimensions of Single and Dual Solid-Tire Wheels

The Division recommends that the steel band thickness for the felloe bands for the 31/2 and 4-in. tires be changed from 1/4 to 5/16 inches. This action is taken

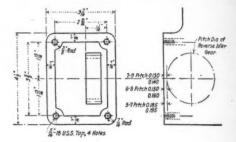
in view of the difficulty experienced by wood wheel manufacturers in having the bands of lighter section stretch on application to the wood wheels, thus leaving the felloe bands oversize after application. The revised standard reads as follows:

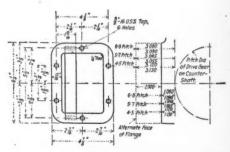
		ninal ire lths		dth elloe Band	Thick o Steel		Minin Fe Thick	lloe
	3	75	21/4	56	1/4	635	11/2	38
	31/2	90	23/4	71	5/16	793	11/2	38
Single Wheels	4	100	31/4	81	5/16	793	13/4	44
	5	125	41/4	106	3/8	952	2	51
	6	150	51/4	131	3/8	952	2	51
	7	175	61/4	156	3/8	952	2	51
	8	200	8	200	3/8	952	2	51
Giant Single to.	10	250	10	250	3/8	952	2	51
Fit Dual	12	300	12	300	3/8	952	2	51
	14	360	14	360	3/8	952	2	51
	4	100	8	200	3/8	952	2	51
Dua1	5	125	10	250	3/8	952	2	51
	6	150	12	300	3/8	952	2	51
	7	175	14	360	3/8	952	2	51

Transmission Division Tire Pump Mounting. Transmission

It has been desired for some time to have a standard tire-pump transmission mounting and, with the development of truck pneumatic tire equipment, this subject has been taken up by the Transmission Division in joint meetings with transmission and truck manufacturers. It is believed that the two sizes proposed cover all general requirements and provide adequate means for mounting the tire-pump on the transmission without causing radical changes in transmission design. The Division therefore recommends for adoption as S. A. E. Standard the large and small types of transmission mountings shown in the following drawings:

This subject has also been considered by the Truck Standards Division for power take-off and these recommendations are concurred in by this Division.





Wood Felloe Dimensions for Pneumatic Tire Rims

The Division recommends that the dimensions for the sizes marked with an asterisk be included in the present standard as given in the following table: Valve Hole Dimensions for Demountable

Rims Wood Fellos Dimensions

	V	ood rell	oe Dime	nsion	S.
Nomin	a1	Tire and	†Width	† I	epth
Ri	m	Size			
30	x	31/2	11/2	11/4	+ 1/16
32	x	31/2	11/2		0
*32	x	4	13/4	11/4	+ 1/16
					- 0
33	x	4	13/4		+ 1/16
*32	x	41/2	21/8	11/1	- 0
34	X	41/2	21/8	11/4	+ 1/16
					- 0
36	x	6	31/4	15/3	+ 1/16
38			3 29/32		+ 1/16
40	X	8	41/4		+ 1/16
*44	x	10	51/4	15/8	+ 1/16

*Dimensions in inches.

twidth of felloes for demountable rims on cold rolled bands.
Note: The above values correspond to those adopted by the Automotive Wood Wheel Manufacturers' Association.

Pneumatic Tires and Rims for Passenger Cars and Commercial Vehicles

The Division recommends the following revised list of pneumatic tire and rim sizes for passenger cars and commercial vehicles:

	Tire and Sizes	Over: Tir		Tire-Seat D (Rim)	ia.	Type of Rim
Inches	Mm.	Inches	Mm.	Inches	Mm.	
30x3½	90/585	31x4	105/585	23	585	Clincher
32x3½	90/635	33x4	105/635	25	635	Straight Side
32x4	105/610	33x41/2	120/610	24	610	Straight Side
33x4	105/635	34x41/2	120/635	25	635	Straight Side
32x4½	120/585	33x5	135/585	23	585	Straight Side
34x4½	120/635	35x5	135/635	25	635	Straight Side
36x6	150/610	38x7	175/610	24	610	Straight Side
38x7	175/610	40x8	200/610	24	610	Straight Side
40x8	200/610			24	610	Straight Side

NOTE: These tire and rim sizes will be the only ones used on manufacturers' equipment after January 1, 1919, and conform to Bulletin No. 267 of the National Automobile Chamber of Commerce.

Carrying Capacities and Inflation Pressures of Pneumatic Tires

The Division recommends for S. A. E. Standard the following revised and expanded table of carrying capacities for cord commercial vehicle tires.

Tire Size	Maximum Load per Tire	Corresponding Air Pressure
3		
31/2		
4 -	850	70
41/2	1200	75
5	1700	80
6	2200	90
7	3000	100
8	4000	110
*9	5000	120
*10	6000	130

The loads and pressures for these sizes are S. A. E. Recommended Practice only.

Massachusetts Amends Trailer and Truck Bill

BOSTON, MASS., July 5—The truck and trailer bill of Massachusetts, which has caused so much protest because of its prohibitive fees, has been passed by the House in an amended form. The amended bill reduces fees for larger sized trucks but they are still about three times the present fees.

The amended schedule follows:

Before Amendment

Capacity																		Fee
1-ton or less							9		0					0	0			\$10.00
Over 1 to 11/2	-ton	is.			0					0						0		15.00
Over 11/2 to 2	-ton	is.						,									0	20.00
Over 2 to 21/2	-ton	ıs.				0					0		٠					25.00
Over 21/2 to 3	-ton	ıs.									u	0			4	0	0	30.00
Over 3 to 31/2	-ton	IS.											٠			0		40.00
Over 31/2 to 4	-ton	ıs.				0		0		9	0	0	0			0		50.00
Over 4 to 41/2	-tor	ıs.																75.00
Over 41/2 to 5	-tor	ıs.																100.00
Every addition	nal	1/	2-	t	0	n				0	0							50.00

After Amendment

Capacity	Fee
1-ton or less	.\$10.00
Over 1 to 2-tons	. 20.00
Over 2 to 3-tons	. 30.00
Over 3 to 4-tons	. 40.00
Over 4 to 5-tons	. 50.00
Over 5 to 6-tons	. 60.00
Over 6 to 7-tons	. 70.00
Over 7 to 8-tons	. 80.00
Over 8 to 9-tons	. 90.00
Any capacity over 9-tons	.100.00

Fees for capacities over 7 or 8 tons probably relates to trailers, as the laws of the state prohibit gross weight in excess of 28,000 lb.

Adams-Williams Elects Officers

NEW YORK, June 17.—At a special meeting of the directors of the Adams-Williams Manufacturing Corporation, F. C. Schwab was elected president, and S. H. Crittenden, vice-president; Leo W. Schwab was re-elected secretary and treasurer. Plans have been made to enlarge the factory space and greatly increase production.

Goodyear Prepares to Manufacture on Pacific Coast

AKRON, OHIO, July 7.—The Goodyear Tire & Rubber Co. is making plans for the construction of a tire factory and a cotton mill in California. These factories will operate in conjunction with the Akron factories, and present plans provide for the incorporation of two subsidiary companies, the Goodyear Tire & Rubber Co. of California, with a proposed capital of \$20,000,000, and the Pacific Cotton Mills Co., to be capitalized at \$6,000,000, which will take over the new enterprises.

Construction of the two plants will be started at once. A site of 600 acres has been secured in the southern part of Los Angeles. It includes the property now occupied by the Ascot speedway.

The Goodyear Pacific Coast plant will manufacture all tires needed for consumption in the western states and for export to the Orient. The fabric used in the Los Angeles factory will be milled in the plant of the Pacific Cotton Mills Co., which will also supply the needs of the Goodyear plants at Akron.

Coming Events

July 25-26—Detroit, Mich. Convention National Association Motor Truck Sales Managers.

September 1-6—Greenville, S. C. Southeastern Good Roads Congress and Farm Tractor Exposition.

September 22-25—Philadelphia, Pa. Annual Convention, National Association Purchasing Agents.

January 3-10, 1920—New York, N. Y. Truck Show, 22nd Regiment Armory. January 24-31, 1920—Chicago, Ill. Truck Show, Drexel Pavilion.

May 12-15, 1920—San Francisco, Cal. Seventh National Foreign Trade Convention.

Build Now!

GOOD ROADS AND SEE HOW QUICKLY GOOD TIMES WILL ROLL DOWN THOSE ROADS

Changes in Service Personnel

Service motor truck advertising will be in charge of R. C. Spinning, formerly assistant manager of sales and advertising for the Service Motor Truck Co., Wabash, Ind. Frank L. Johnson will be manager of sales promotion. Mr. Johnson has just received his discharge from the Marine Corps, where he served as a lieutenant during the war. He was formerly with the White Company and prior to that with the Simplex and Stutz organizations.

E. T. Herbig, who has been both advertising and sales manager of the Service Co. for a number of years, will be relieved of much detail by the foregoing appointments, and will assume the duties of sales director, devoting more time to keeping in personal touch with Service distributors in all parts of the country.

The Auto Electrician's Guide is the title of a new book which is being placed on the Market by the Michigan State Auto School, of Detroit, Mich. It is a book of interest to those working in a garage or service station, as it answers many of the everyday questions concerning electricity in its relation to the automobile. It contains more than 850 wiring diagrams, covering every system of wiring in use on all standard cars, including the new 1919 Ford system. There are 286 internal wiring diagrams which give information on internal wiring of generators, controllers, coils, starters, switches and other electrical parts.

The book is made up in loose leaf form, making it easy and convenient to insert additional diagrams as issued. The book sells for \$7.50 per copy.

Stewart Motor Corp., Buffalo, N. Y., has purchased from the Russell Motor Car Co. its plant on Dewey Avenue. The Stewart corporation, which at present is operating four plants in Buffalo, proposes to close three of these plants and also move the equipment to the new factory.

News of the Trade in Brief

New Highway Bill Differs From Townsend Bill on Several **Important Points**

WASHINGTON, July 8.-Representative Osborn, of California, has introduced in Congress a bill for the establishment of a Department of Federal Highways and definite trunk-line roads across the United States. The bill includes an appropriation of \$1,700,000,000 for this work. Mr. Osborn's bill provides for a Department of Federal Highways, instead of the commission suggested in the Townsend Bill. It states definitely the number of trunk lines to be established. the names and salaries of the various officers, and increases the appropriation from the \$450,000,000 of the Townsend Bill to \$1,700,000,000.

The bill creates a Department of Federal Highways with a secretary in charge and includes the establishment of not less than three main trunk-line roads from the Atlantic to the Pacific Oceans, and not less than four main trunk-line roads from the southern to the northern boundary of the United States. There are to be not less than two main trunkline roads in each state with intersecting roads connecting the entire National Highway System. Of the \$1,700,000,000 appropriation \$100,000,000 is to be appropriated at once and \$200,000,000 annually for seven successive years.

Bond issues may be made each year under the provisions for the amount of the appropriations.

French Government to Take Over U. S. Army Vehicles

PARIS, June 30 .- It is reported that the French government will purchase from the American army the entire automotive equipment now in France. This equipment includes 7575 passenger cars, 32,300 trucks and 40,000 motorcycles, bicycles and trailers.

The French authorities, it is said, propose to distribute throughout the country and elsewhere in Europe the vehicles which the American army is without right to sell in France.

New French Tariff Rulings

WASHINGTON, July 3.-The Bureau of Foreign and Domestic Commerce at Washington has received a copy of the official French Gazette, in which it is stated that the tax of 70 per cent. ad valorem remains on automobiles weighing less than 2500 kilos. On all machines weighing 2500 kilos or more, the tax reverts to the old schedule of 50 francs per 100 kilos, plus a surtax of 10 per cent. ad valorem. A kilo is 2.2046 lb.

Dealers Organize for Better Service

NEW YORK, June 24.—At a meeting held last night at the Automobile Club of America, an effort was made to organize the managers and mechanical superintendents of the service departments of the truck agencies and factory branches. The meeting was called by C. L. Rognon to discuss the problems arising from the employment of halfskilled repairmen in both the passenger and commercial car fields, but the consensus of opinion was that classifying mechanics was a problem best solved by the individual dealer or factory branch.

All present were unanimous that any steps taken to improve service should be encouraged, that if it was possible, the heads of the service departments should be encouraged, and that, if it was possible, the heads of the service departments should organize and hold meetings at which the various problems could be discussed. M. A. McCullough, service director of the Garford Motor Truck Co., Lima, O., was present, and he advocated any organization that would tend to improve service and stated that his company was interested in any movement along these lines.

C. P. Shattuck, eastern field editor of the COMMERCIAL CAR JOURNAL, pointed out the vital importance of service in the merchandising of motor trucks and cited several instances where lack of proper service, of the dealer failing to keep his customer's trucks on the road had resulted in the user trading in his cars for another make, the representative of which gave real service. The speaker also said that any plan that would bring the truck dealers into closer relations, that would bring about the exchange of efficient service shop systems, repair methods, etc., should be encouraged, for in the near future a truck dealer would have to consider these factors if he expected to merchandise trucks.

Ray Sherman, editor of Motor World, suggested that a committee of organization be appointed. Chairman C. L. Rognon, of the Vim Motor Truck Company's New York City service branch, appointed the following: Ernest V. Derks, William F. Wahrenberger, R. F. Oakes, F. W. Fenn and J. F. Gefrorer. This committee is to call a meeting atter acquainting dealers with the principles of the plan.

At the conclusion of the meeting those present informally discussed service problems. It was agreed that the New York dealers should organize and meet monthly to iron out the wrinkles of the service policies. While no attempt will be made to classify or rate mechanics it is probable that a list will be compiled

with data as to their capabilities, records, etc., for exchange among the members,

Another good suggestion was that of exchanging efficient repair methods. For example: It is proposed that the Garford service department supply Garford dealers in the smaller places with complete and specific information on repairing and overhauling Garford trucks as well as suggesting special tools and devices re-

ducing time and labor costs.

It is believed that the organization proposed will accomplish a very useful purpose, that of getting the dealers acquainted with each other. This will solve some of the problems now confronting them in merchandising trucks in New York City. It is also thought that similar organizations will be effected in other large cities and that a national exchange of ideas will follow as a result.

Temporary officers of the association are: Ralph C. Rognon, president; J. W. Watt, vice-president; J. Howard Pile, secretary, and E. V. Deerks, secretary.

Dealers' Division of Motor Truck Association of America Holds Dinner

NEW YORK, N. Y., July 1.-Much was done to rid the business of its troubles at the dinner given by the Dealers' Division of the Motor Truck Association of America. It seemed to be the consensus of opinion that the business of handling "trade-ins" needed immediate attention in New York, and that the one and only way to overcome the present state of affairs is by united action on the part of all the dealers. The Metropolitan Dealers' Motor Truck Exchange was founded with this object in view.

Charles G. Bond, counsel for the Motor Truck Association, said that most of the dealers of New York were very much in need of protection by an organization of this character because their business is in jeopardy through the influences attributed to the present practice of "trading in" used cars.

The exchange has devised a plan to do away with the practice of overbidding on the second-hand truck. An appraiser, appointed by the exchange, will, upon notification of a dealer, call and set a price on the truck in question, say \$500. If the prospect is satisfied with the appraised price, the used truck is taken in, in exchange, and the dealer receives \$500 in cash. If the truck is of his own make and he desires to keep it he may do so by paying 10 per cent. to the Exchange. The Exchange is to secure a building for repair shops, stock, repair and sales rooms and offices. High class workmanship and reliability will be assured.

There are numerous other advantages of the Exchange, but the possibility of relieving the used car situation should be sufficient inducement for all dealers

to become members.

Captain Listman spoke on the success of a similar association in Troy, N. Y. He said that over and above expenses the exchange cleared \$15,000 during the past seven months and therefore was an excellent investment. The first thing to be done, however, is to gain the confidence of the public.

The Motor Truck Association endorses this dealers' second hand truck exchange as a big step toward ridding the industry of one of its most harmful practices.

Used-Car Bill Passed in Pennsylvania

HARRISBURG, PA., July 1.-Approval of two motor vehicle bills has been announced from the Governor's office. The "second-hand car" bill requires complete description of the car with bills of sale, statements as to ownership and changes made in the car, all to be sworn, one copy to be filed with the state highway commissioner and one with the chief of police or clerk of quarter sessions court. Operation is forbidden until such statement is filed when a car is sold.

All dealers in used cars must take out a state license at annual fee of \$100 and be vouched for by two persons.

The bill regulating the licensing and operation of cars provides that motor trucks shall be licensed by classes, according to weight, from \$20 to \$150, the latter fee being for 10,000-lb. chassis. Truck lengths are limited to 28 ft., width to 90 in. and weight to 28,000 lb. Trucks are also limited to speed by classes, ranging from ten m.p.h. for heavy grades to 20 m.p.h. for lighter trucks.

Sworn statements that applicants for licenses are physically able to operate

cars are required.

The bill also provides, with regard to trucks from other states, that those having licenses from other states may run in this state once a week.

Dithrich Bill Finally Approved

HARRISBURG, PA., July 5.-In the last few days of its session the Pennsylvania State Legislature put the finishing touches to the Dithrich motor code bill, and it was approved by the Gover-

Provision is made in the bill for the registration of commercial cars by chassis weight alone, and the classes established and registration fees are as follows:

Class	AA, 2000 to 3000 lb\$20
Class	A, 3000 to 4500 lb\$25
Class	B, 4500 to 6000 lb\$30
Class	C, 6000 to 8000 lb\$50
Class	D, 8000 to 10,000 lb\$75
Class	E, 10,000 to 12,000 lb\$100
Class	F. over 12,000 lb\$150

Commercial vehicles weighing less than 2000 lb. "will be registered according to horsepower."

Weight limits for commercial vehicles to include chassis, body and load are made as follows: Class AA, 7000 lb.; A, 11,000 lb.; B, 15,000 lb.; C, 20,000 lb.; D, 24,000 lb., and Classes E and F, 26,000 lb. The bill also provides for a limit of 28 ft. in length, 90 in. in width and for 26,000 lb. in weight, which is overall weight, including chassis, body and load. All trucks now registered or contracted for prior to the passage of the bill are exempt from length regulations. The matter of granting reciprocity to commercial vehicles of other States is changed in the amended bill from one round trip per month to one round trip per

Bill to Provide That Truck Chassis and Parts be Taxed Same as Complete Trucks

WASHINGTON, July 7-Mr. Kraus of Indiana has introduced a bill in the House of Representatives (H. R. No. 6559), which was referred to the Committee on Ways and Means and ordered to be printed, as follows:

"A Bill to amend section 900 of an Act entitled: 'An Act to provide revenue, and for other purposes,' approved February

24, 1919.
"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that paragraph 1 of section 900 of an Act entitled 'An Act to provide revenue, and for other purposes,' approved February 24, 1919, be amended to read as follows:

"Automobile trucks, automobile wagons, and chassis thereof (including tires, inner tubes, parts, and accessories therefor, sold on or in connection therewith or with the sale thereof), 3 per centum."

Goodyear Newspapers Have Large Circulation

Events of interest in the Goodyear family and events of the outside world affecting the Goodyear family are chronicled for Goodyear employes in the Goodyear Tire News and the Goodyear Family Newspaper. The Goodyear Tire News, which has a monthly circulation of 60,000, contains, besides news items. articles on efficiently managed service stations and on the use of pneumatic tires, and has a department devoted to hints on vulcanizing. The leading article of June number had for its subject the part played by Goodyear tires at the Indianapolis races.

The Goodyear Family Newspaper has a circulation of 20,000 copies monthly. It contains personal items and photographs of interest to the employes of

the various branches.

Correction: In the body building dimensions listed in the June issue of our Journal, the capacity of the Fulton 11/2 to 2-ton truck, built by the Fulton Motor Truck Co., of Farmingdale, Long Island, N. Y., was inadvertently given as 34-ton.

Excessive Fees for Iowans after January 1, 1920

WATERLOO, IA., July 5.—Motor truck operators in Iowa will have to pay most excessive fees unless some further action is taken between now and January 1, 1920. In April the Iowa legislature passed a bill increasing the fees on all trucks and making those on the trucks of larger capacity almost prohibitive. The schedule is as follows:

Schedule of License Fees for Motor Trucks for the State of Iowa after

January 1, 1920.

A-Motor Trucks Equipped with All Pneumatic Tires.

Per a	nnum
For 1-ton or less capacity	\$15.00
For 11/2-tons capacity	22.50
For 2-tons capacity	30.00
For 21/2-tons capacity	45.00
For 3-tons capacity	65.00
For 3½-tons capacity	90.00
For 4-tons capacity	105.00
For 4½-tons capacity	120.00
For 5-tons capacity	135.00
For 6-tons capacity	165.00

B-Motor Trucks Equipped with Two or More Solid Rubber Tires.

Per a	nnum
For 1-ton or less capacity	\$15.00
For 1½-tons capacity	22.50
For 2-tons capacity	30.00
For 2½-tons capacity	55.00
For 3-tons capacity	75.00
For 3½-tons capacity	100.00
For 4-tons capacity	115.00
For 4½-tons capacity	130.00
For 5-tons capacity	145.00
For 6-tons capacity	175.00

It is the duty of every Iowan to fight this excessive tax.

Carburetor Company Reorganized

CHICAGO, June 18 .- Rayfield carburetors, formerly made by the Findeisen & Kropf Mfg. Co., will be manufactured in the future by the Beneke & Kropf Mfg. Co. Henry Beneke, who has for the past twenty-seven years been associated with Hibbard, Spencer, Bartlett & Co., has purchased the entire interests of Frederick Findeisen in the company.

Both plant and equipment are to be enlarged and, when expansion measures now in progress are completed, it is expected that present production of Rayfield carburetors will be doubled.

O. F. Kropf remains with the reorganized company as its active president, and E. A. Bates continues as director of sales and advertising.

William Walker

William Walker, president of the Walker Mfg. Co., Racine, Wis., died recently at the age of 69. The announcement of his death brings with it a feeling of genuine regret to all who knew him, or who were acquainted with his sterling character through dealings with the accessory firm of which he was president.

Martin and Parry Companies Consolidate

YORK, PA., June 26.—At a recent meeting of the directors of the Martin Truck & Body Corp., of York, and the Parry Manufacturing Co., of Indianapolis, Ind., a merger of these two large body-building companies was effected.

The new organization will be known as the Martin-Parry Corp. The consolidation of the two plants will greatly increase production facilities and the combined output will approximate 60,000 bodies the first year. It is the intention of the new organization to carry on the business of both factories as closely as possible along established lines, except that all present dealers will be given the opportunity of handling both Parry and Martin lines on the same basis.

The following directors were elected: Chairman, John J. Watson, Jr., vice-president, treasurer and director of the International Agricultural Corp.; Guy E. Tripp, chairman of the board of directors, Westinghouse Electric Mfg. Co.; F. M. Small, president, Martin Truck & Body Corp.; Robert I. Barr, vice-president, Chase Securities Corp.; James F. Shaw, of Knauth, Nachod & Kuhne; S. E. Parry, former president Parry Mfg. Co.; Walter R. Herrick, of Herrick, Berg & Co.; George H. Walbridge, vice-president, Bonbright & Co.

Officers were elected as follows: F. M. Small, president; Henry Hopkins, Jr., secretary and treasurer.

New Jersey Savold Tire Company Organized

NEWARK, N. J., July 7—A new Savold tire company has been organized in Newark, N. J., with a capital of \$2,000,000. It will be known as the New Jersey Savold Tire Company. The plant has a capacity of 400 tires a day. L. R. Best is president; A. J. Davis, vice-president, and R. K. Underhill, secretary and treasurer. Other Savold stations will be established at Atlantic City, Trenton, Camden and Jersey City, and will engage in the business of rebuilding worn tires under the Savold process.

Trade Literature

Flexible Metal Hose Tubing and Accessories.—Breeze Mfg. Co., Newark, N. J.—This catalogue is dedicated to the engineer, mechanical superintendent, factory manager and students of mechanics. It presents technical information for the solution of many engineering problems. It has been designed chiefly for study and reference and further details and technical data of value to designing engineers will be gladly furnished in tabulated form by the Breeze Mfg. Co.

Gill Piston Ring Size Directory—Gill Mfg. Co., Chicago, Ill. This piston ring size directory is complete and up-to-date. It contains a description of the Gill ring, together with instructions for its installation, and price list. Locations of stocks and distributing centers are also listed. The directory is sent to dealers free of charge, and a charge of 25 cents is made to other persons interested.

How Training Departments Have Bettered Production.—This pamphlet is issued by the United States Training Service. It is a symposium of experiences in seventeen factory training departments, together with suggestions as to how to carry on instruction. Several factories manufacturing automobiles and parts are cited. All requests for this booklet should be addressed to U. S. Training Service, care of Department of Labor, Washington, D. C.

Rubber Working Machinery—The Allen Machine Co., Erie, Pa., catalog "D" illustrates and describes Allen Rubber Mill Machinery. This line includes heavy shafting and drive, vulcanizing equipment, inner tube equipment, tubes and strainers, mills and calendars, hydraulic presses, reduction gears, rubber washers, refiner, etc.

Shipping's Share in Foreign Trade—Fundamentals of Ocean Transportation—Guaranty Trust Co., New York City. The importance of the merchant marine in the development of foreign trade, and facts the exporter should know concerning the technique of shipping by ocean carriers, are set forth interestingly in

this booklet. It is one of a series dealing with export trade which the company is putting out, and is written to meet the needs of the newcomer in the field, as well as to provide a handy reference for the experienced trader. It contains information concerning the various papers the exporter must procure in making shipments, and has a section devoted to the problem of financing export shipments. It will be sent upon request to interested persons.

National Tire and Rubber Co. Holds Annual Meeting

EAST PALESTINE, Ohio, June 21.— The annual meeting of the stockholders of the National Tire & Rubber Co. was held recently, and a financial report, showing that the company's sales exceeded those of all previous years, was read. The stockholders authorized the sale of the remaining unissued capital stock, both common and preferred, as the initial step in a plan for the expansion of the business. This plan provides for the trebling of the company's output.

The following officers were elected at a meeting following the stockholders' meeting: C. L. Merwin, president; S. L. Warner, vice-president and general manager; C. W. Helman, secretary and R. B. Taggart, treasurer. At a special meeting of the board of directors, C. E. Miley was made vice-president and general sales manager.

Wright Takes Over Hooven Radiator

CHICAGO, June 23.—Lawson W. Wright, who has been connected with the automotive industry for a number of years, has acquired control of the Hooven Radiator Co., and has become its president and general manager.

Mr. Wright stated that it is his purpose to put the business on a sound financial footing and to build the enterprise upon sound principles, good service and efficient management.

This company, besides manufacturing the Hooven radiator, under the Spery patents, does a large jobbing business on Ford radiator replacements. The factory occupies about 21,000 sq. ft. of floor space at 517 West Monroe St.

Garford Has "Service Unit" Department.-The Chicago branch of the Garford Motor Truck Co. has installed a new department in its service station known as the Service Unit Department. A complete stock of parts is maintained there and when a truck is brought to the plant for repairs or for replacement of a defective part, this part is taken from the Service Unit Department and placed in the truck. The driver is enabled to take the truck out of the shop in about an hour's time, while otherwise the repairing of the part might require several days. If the owner of the truck desires it, the part originally in the truck will be repaired and exchanged for the new part used as a replacement in the machine.



Salesmen of Champion Spark Plug Company Hold Convention at Toledo

One hundred and twenty-five factory representatives answered present to the roll-call taken the first day of the convention at the plant of the Champion Spark Plug Co. One feature of the convention program was the breaking of ground for the new Canadian plant of the company at Windsor, Ontario.

Army's Transcontinental Tour Visualizes the Need of National Highways

Army's Contribution to the Good Roads Movement to Demonstrate Development of Motor Transport Corps. Trip Will Provide Experience and Data for War Department. Lincoln Highway Renders Valuable Assistance

THE commercial car came into a new field when, on July 7, an army convoy, composed of 60 trucks and passenger cars and a personnel of 209 officers and men, exclusive of observers, started on a 3200-mile tour from Washington, D.C., to San Francisco.

The departure of the convoy was made the scene of a festival seldom equalled in the annals of automobile history. Secretary of War Baker, as the presiding cabinet officer in the city, accepted on behalf of the nation, a replica milestone, emblazoned with the routes of national highways in the United States. This was dedicated at Lafayette Park at the time the convoy started. A permanent stone will be presented later, to be accepted by President Wilson, as soon as relief from official duties permit. It is proposed on this permanent stone to emblazon all national highways as they are constructed in later years.

Carrying out the same plan, a similar stone will be dedicated in Lincoln Park, San Francisco, when the convoy has completed its tour. Smaller milestones will be dotted along the Lincoln national highway as the expedition passes through and its appearance is to be made the scene for a "Good Roads" holiday and an exposition of the value of efficient highways from a national, military and commercial standpoint.

Governors of all states have offered their co-operation in the plan. At every large city an overnight stop will be made. In all, the expedition will stop at about 60 cities and villages, and speeches, emphasizing the need of good roads, will be given by army officials and officers of the Lincoln Highway association.

"One of the remarkable and entirely new developments of the war," declared Secretary Baker in his speech of acceptance, "was the inauguration of a regular timetable and schedule for these trucks.

In the daytime they were held in thickly wooded sections, but at night each one started out with a map and regular schedule which was followed as closely as the modern railroad. In no previous war has motor transportation developed to such an extent.

"This world war was a war of motor transports. It was a war of movement, especially in the later stages when the practically stationary position of the armies was changed to meet the new conditions. There seemed to be a neverending stream of moving transports along the white roads of France."

To Illustrate Development of M. T. C.

In announcing the trip, Brigadier-General Charles B. Drake, who will be in personal command of the convoy from Salt Lake City west, said:

"We hope in conducting this first transcontinental run of an army transport convoy, to give an exhibition to the general public of the vast development of the motorized branch of the army and of the motor vehicle for military purposes, which development is conceded to be one of the principal factors contributing to the winning of the war. It is also to be hoped that the trip, in addition to providing experience and data required by the War Department, will serve the purpose of indicating the need for the immediate development of transcontinental highways and of through interstate connecting roads as military and economic assets. This trip over the Lincoln Highway is in a measure the War Department's contribution towards the good roads cause, a movement in which the army is vitally interested.'

Vice-president and field secretary H. C. Ostermann, of the Lincoln Highway Association, has been appointed by General Drake, of the Motor Transport Corps, as official pilot for the trip, and the Lincoln Highway Association has been delegated to handle all publicity

for the army and to co-operate in every way possible to provide the best of road conditions.

Rev. Dr. Couden, chaplain of the House of Representatives, pronounced the invocation and benediction before the convoy started. Robert N. Harper presided at the dedication exercises. Major-General March and Representative Kahn, of California, were present. The latter presented Col. Charles McClure, commander of the party, with two wreaths to be given to the Governor of California. High army officials, officers of the Lincoln Highway association and a throag of civilians witnessed the departure.

As the last words were uttered gears were shifted at the word of command and the party set on its way. Accompanying the convoy to the outskirts of the city were numerous cars containing among others: Brig. Gen. Charles B. Drake, Col. James W. Furlow, Col. A. O. Seaman and Lieut. Col. J. M. Ritchie.

Many aims are to be served by the army in making the trip. It is intended to be the army's contribution to the good roads movement, tô demonstrate the efficacy of motor trucks for military purposes and to determine which kind of trucks are best adapted to the various branches of military service, to aid recruiting and to give an opportunity for observation officers to note actual conditions in the field.

Convoy to be Its Own Supply Station

In its route the convoy aims to be absolutely independent, with the exception of water, gas and oil supplies, which will be purchased en route. Spare parts will be taken along. The personnel will include mechanics and helpers able to do any repair work needed on the road. A medical staff will accompany the party.

The trip is expected to last until September 1, when the convoy reaches San



Only a Small Portion of the Motor Truck Train Which is Making the Transcontinental Tour

Francisco in accordance with the following itinerary:

to wang tumorany		Date of	1
Control Point Washington	Miles		,
		July 7	1
Frederick, Md	46	8	,
Chambersburg, Pa	62	9	,
Bedford, Pa	58	10	
Greensburg, Pa	63	11	1
East Palestine, O		12	,
			-
Wooster, O	83	14	
Bucyrus, O		15	
Delphos, O		16	
Fort Wayne, Ind		17	
South Bend, Ind		18	
Chicago Heights, Ill	79	19	
Chicago Heights, Ill	10	13	
DeKalb, Ill	80	21	
Clinton, Ia.		22	
Cedar Rapids, Ia.		23	
Marshalltown, Ia		24	
Jefferson, Ia		25	
Dennison, Ia	68	26	
Council Bluffs, Ia	79	28	
		29	
Omaha, Neb.			
Columbus, Neb		30	
Grand Island, Neb		31	
Lexington, Neb.		Aug. 1	
North Platte, Neb	64	2	
Big Springs, Neb	75	4	
Kimball, Neb.	80	5	
Cheyenne, Wyo		6	
Lamarie, Wyo	57	7	
Medicine Bow, Wyo	59	8	
Rawlins, Wyo	62	9	
Tipton Station, Wyo	E0	11	
		12	
Green River, Wyo Fort Bridge, Wyo	00	13	
Evanstone, Wyo		14	
Salt Lake City, Utah		15	
Orr's Ranch, Utah	74	16	
Sheridan's Ranch, Nev	80	18	
Ely, Nev.		19	
Eureka, Nev.		20	
		21	
Austin, Nev			
Westgate, Nev		. 22	
Fallon, Nev	94	23	
Carson, Nev	66	25	
Myers, Calif.		26	
Placerville, Calif		27	
Sacramento, Calif	50		
Stockton Colle	40	28	
Stockton, Calif	48	29	
Oakland, Calif	80	30	
San Francisco		Sept. 1	
		To De act	

An intensive recruiting campaign for the Motor Transport Corps will be conducted during the entire route. The personnel of the convoy is composed of men who have re-enlisted for one or three year terms. These men, together with any recruited during the tour, will be sent to motor transport training camps at the termination of the tour.

At the conclusion of their terms of enlistment they will be given the choice of applying for admission to officers' training camps, for admission to West Point or of entering civil life with the apprenticeship of a trade at their beck.

A strict record will be kept of the performance of every machine during the party's progress.

The War Department announces the equipment constituting the convoy to be as follows:

COMPANY A

Passenger Cars

- 1 Light, open, Dodge
- 1 Staff Observation, White

Ambulances

1 Heavy GMC

Motorcycles

- 1 Solo, Harley-Davidson
- 2 Side Cars, Harley-Davidson

Trucks

- 3 Mack
- 3 Riker
- 3 FWD
- 3 Packard
- 1 White, new drive, 3 ton
- 3 Standardized B
- 2 Light delivery, Dodge

Miscellaneous

- 1 Machine Shop Truck
- 1 Kitchen Trailer
- 1 Tank Truck

COMPANY B

Passenger Cars

- 1 Light, open, Dodge
- 1 Heavy, open, Cadillac
- 1 Reconnaissance, White

Ambulances

1 Heavy GMC

Motorcycles

- 1 Solo, Indian
- 2 Side Cars, Indian

Trucks

- 6 1½-ton, White
- 2 11/2-ton, GMC
- 7 3-ton Standard B
- 2 Light delivery, Dodge

Miscellaneous

- 1 Tank Truck
- 1 Kitchen Trailer 1 Water Tank Truck

ENGINEER UNIT

- 1 Engineer Shop Truck
- 1 Office Work Truck
- 1 Searchlight Truck

Boy Scouts on Truck Tour

AKRON, OHIO, July 9.—Fifty boy scouts with their officers left Akron, Ohio, June 26, on a unique motor truck camping trip. The expedition, arranged through the generosity of the Goodyear Tire & Rubber Co., consists of a caravan of five big Goodyear trucks diverted from the company's Akron-Boston express line where they are constantly transporting rubber products.

The party will cover 3,000 miles and pass through nine states, visiting the scenic and historical points along a route leading through Niagara Falls, Syracuse, Utica, Albany, Lake George, Lake Cham-

plain, White Mountains, Portland, Me.; Boston, Providence, New Haven, West Point, Ithaca, Lake Chautauqua and Youngstown, back to Akron.

Three large trucks carry the party, a fourth transports the baggage and camping outfits, while a fifth carries the field kitchen and the eats.

The pneumatic tired trucks, with double deck providing upper and lower sleeping berths, insure the same comfort for passengers as that furnished in Pullman cars. Two shifts of drivers accompany each truck, permitting travel at night, while the boys are rolled up in their bunks.

Colleges to Instruct Motor Transport Corps Units

As a result of the work of the training corps of the Motor Transport Corps of the U. S. A., a plan by which the various colleges and universities of the country will instruct Motor Transport Corps units has been presented to the various institutions of learning. It is believed that thirty or more of the leading universities and colleges, beginning next fall, will have departments in which such training in highway transportation will be given to the motor transport corps units of the R. O. T. C.

The War Department will of course decide on the policy that will govern the organizing and the placing of these various units, and it is believed that this work will result in well trained men for commercial posts in the field of Highway transportation.

Chicago Truck Demonstration

CHICAGO, ILL., June 30.—J. E. Tracy, of the Sterling Motor Truck Co., and W. G. Rightman, of the Winther Motor Truck Co., are planning one of the most extensive demonstrations of the truck ever given to the farmer. About forty or fifty trucks, designed especially for farm work, are to leave Chicago early in July. These are to be accompanied by various accessory trucks showing tires and numerous accessories. There will be about 75 trucks in all.

The itinerary will cover Iowa, Illinois, Wisconsin, Minnesota and North and South Dakota. The trip will require about two months to complete. Its object is to convince the farmer of the value of the truck as a hauling proposition.

Distribution of Army Trucks

WASHINGTON, June 25.—The transfer of the entire present surplus of serviceable motor trucks held by the army in the United States to other government departments has been approved by the Director of Sales of the War Department. This will dispose of 30,000 trucks. They are to be divided among the Post Office Department, the Public Health Service, and the Bureau of Public Roads and Department of Agriculture.

Allied Industries, Inc., 279 Minna St., San Francisco, Cal., has been appointed exclusive sales representative on the western coast for the Victor Mfg. & Gasket Co., of Chicago, and will handle all sales west of Salt Lake City. Abner C. Delson, sales and advertising manager of the Victor Mfg. & Gasket Co., is now perfecting a strong sales organization and expects to reach all customers through representatives traveling direct from the factory.

Build Now!

YOU CAN NOTICE
THE EARMARKS OF PROSPERITY
ALONG GOOD ROADS



EDITORIALS



A Short-Sighted Sales Policy

E have met in our travels quite a few socalled far-sighted truck manufacturers who should by rights be wearing glasses for near-sightedness. Their vision of the future does not seem to extend beyond the present sale of one or two vehicles in a locality.

We refer to the prevalent custom on the part of some, who should know better, of allowing a prospect for two or three vehicles to be signed up as an agent in his territory when he has no intention whatever of selling.

An iceman, a milkman or an expressman of "Cranberry Center," desiring to purchase two or three machines, goes around until he finds an easy manufacturer without representation in his district. He then proceeds to negotiate for the vehicles on the basis that he must have an agent's discount. The gullible manufacturer, for he must be such, replies that he will have to sign up as agent for the machine in that territory in order to get the discount. Without proper investigation as to the intentions of the new agent, his financial standing or ability to sell, apparently with but one thought in mind, that of the present sale of trucks, the manufacturer books this man as a dealer. He is really no more a dealer than the freckle-faced girl behind the counter of the country ice cream parlor, and he will sell no more trucks, blocking absolutely for at least the period of a year the future sale of any of the truck manufacturer's product in that section. This shortsighted policy, we regret to say, is much more prevalent than it should be.

Mr. Manufacturer and Mr. Sales Manager beware the weeding-out process in the truck industry: for such as you are going to be uprooted and wither by the wayside.

What the Distributor Owes the Sub-Agent

E hardly care to be quoted as saying that distributors are in the habit of hogging the profits, but certainly the actions of some distributors indicate that there is such a tendency.

We have in mind cases like the following: A subagent in a certain territory can close the sale of two trucks if he can get delivery of them from the distributor. On this sale he will, of course, take his 15 per cent. or whatever is due him as a subagent. He goes to the distributor only to find that in spite of the fact that he has asked for the trucks

some time before, the distributor has sold them in his own territory and taken his 25 or 35 per cent., as it may be, himself, thus "taking the bread," as it were, "out of the mouth of the sub-agent."

If a distributor cannot get sufficient machines at any time to care for his agents he should make some kind of an allotment that would be equitable and not hog it all for himself. The sub-agents with minor territory and fewer opportunities should be protected or their sale of trucks will be made a secondary matter to some other business more dependable. This is merely a plea for at least decent treatment of sub-agents by distributors.

"Live and let live" should be the motto.

Why Should the Dealer Use Express When He Has Trucks?

APPARENTLY dealers in smaller towns and out-of-the-way districts are overlooking the possibilities of their own machines. It is quite common for such rural truck dealers to ship and receive by express when they could do the work more quickly, more satisfactorily and even at less cost with some of their own trucks.

It behooves dealers in locations where it is sometimes difficult to ship or receive goods even for short distances to look into this matter. The patient always likes to see the doctor take his own medicine and it will encourage highways transportation.

Should the Dealer Take Household Goods in Trade for Trucks?

IN a small town in New York there is one dealer in particular who insists on taking in trade for his trucks, horses, harnesses, stable tools, pianos, typewriters—in fact any old thing. His back room looks like a coupon store where you get furniture for so many slips of paper.

The farmers in the community are embracing the opportunity and trading all kinds of junk for this dealer's trucks. Other dealers in that same town are being asked to take washing machines, egg beaters, mops and so forth, in trade for their machines, but of course they do not do it. The net result, however, is very detrimental to the truck business in that particular section.

The point of the story is that any self-respecting truck dealer should avoid taking all kinds of property in trade. In the first place he should not be a second-hand junk dealer. In the second place it requires a great deal of effort to dispose of such goods and the dealer never knows whether his business is showing a profit or not. In the third place it lowers the standard and upsets the truck business of the entire section.

Dealers in any community should get together,

know each other, pull together and stop any such performance on the part of any one dealer. Such a dealer ought to be run out of business. He is a detriment to good business methods and is setting an example which lowers the standard of the business.

Leading Truck Manufacturers Produce Special Tractor Models for Hauling Trailers and Semi-Trailers

NEW YORK, June 24.-Many wellknown motor truck companies have been so thoroughly convinced, after investigation, of the advantages and economies of trailers and semi-trailers in various lines of business that they not only recommend their use, but are themselves manufacturing special tractors for hauling trailers.

Among the companies offering such tractors as regular models are the Pierce-Arrow, International Motor, Garford, G. M. C., Locomobile, Sterling, Gramm-Bernstein, Indiana, Service, J. C. Wilson, Acme, Winther, Master, Fulton, Armleder, Moreland, Koehler, Day-Elder and Oneida. Other companies, including Kelly-Springfield, Lewis-Hall, Maccar and Dart, build tractors on special or-

Most of the truck manufacturers who do not build tractors recommend the use of trailers with their regular short wheelbase truck models, wherever the character of the customer's haulage work and the conditions of the highways make it certain or probable that trailers can be used successfully.

The tractor trucks are designed especially for draft work, having very short wheelbase, extra-strong frames, heavier axles, wheels and springs, larger tires, lower gear ratios and special builtin attachment devices for the trailers or semi-trailers.

An investigation just completed by the Trailer Manufacturers' Association of America, 110 West 40th Street, New York, shows that motor truck manufacturers recognize the trailer as the newest development in economical and efficient haulage by highway and an important aid to them in selling transportation to industrial and commercial con-

A considerable number of truck companies employ transportation engineers who have made a special study of all phases of haulage and whose duty it is to analyze the customer's requirements and recommend the particular equipment best suited to them. By calling such experts into consultation the prospective purchaser of haulage equipment finds a solution for the most difficult transportation problems, and avoids costly mistakes, such as the purchase of trucks that are too large, more trucks than are needed, trucks not well adapted to his needs, or trucks that would have to stand idle for several hours in the working day while loading or unloading.

As it is to the interest of the truck manufacturer to deal honestly with the customer and sell him only such equipment as will give him the most satisfactory service, the transportation engineer recommends the use of tractors and trailers when his analysis of the requirements and operating conditions shows that they will be most efficient and economical.

The use of trailers enables the truck owner to greatly increase the capacity of his truck at a very slight additional expense and in many cases makes truck operation economical where otherwise it might not compete successfully with haulage by team.

On good, hard roads with moderate grades, almost any good truck has sufficient excess or reserve power to haul, in addition to its own capacity load, a trailer with an equal load, or by the substitution of a fifth wheel for the truck body, to haul a load of double or triple its rated capacity with a semi-trailer or two-wheeled trailer. In the latter case, half the load is carried on the rear of the truck and the other half on the trailer wheels.

The fifth wheel is attached to the truck frame directly over the rear axle and supports the front end of a semi-trailer. It permits an up-and-down rocking mo tion and commonly is provided with springs to take up the shock of starting.

The fifth-wheel trailer provides the most economical and convenient means of transporting excessively long timbers. poles, pipes, stage scenery, derricks and so forth, or unusually neavy articles, such as steam boilers and engines, structural beams, stone columns, etc.

When four-wheeled trailers are to be used with their regular truck models many manufacturers make changes in construction, such as strengthening the rear end of the frame, attaching a pintle hook or building in a spring draw-bar to connect the trailer. and reducing the gear ratios so the truck will travel at lower speed and have more pulling power. Other truck makers, however, have found that such changes are not necessary with their models.

Pennsylvania S. A. E. Holds Meeting at Wilkes-Barre

WILKES-BARRE, PA., June 16 .-The first meeting of the Philadelphia section to be held outside Philadelphia was that on June 14 at Wilkes-Barre. Fifty-seven members and guests were present. The section was entertained by the Sheldon Axle & Spring Co. In the morning the party was taken on a tour of inspection through the company's plant. A fifty-five mile automobile ride over the mountains to McMichael's Inn, where dinner was served, preceded the business meeting.

The officers elected at a previous meeting assumed their new duties at the business meeting. The new officers are: Chairman, A. K. Brumbaugh, vice-chairman, C. A. Musselman; treasurer, W. H. Sackman, and secretary, G. W. Smith, Jr.

The Constitution and By-Laws for Sections, as approved by the Society, were adopted. B. B. Bachman was elected Section Representative on the Nominating Committee of the Society, with G. W. Smith, Jr., as alternate.

Three Companies Join Trailer Association

During the past month three more trailer companies have joined the Trailer Manufacturers' Association which was organized last March and opened headquarters May 1 at 110 West 40th Street, New York. They are the Southern Motor Manufacturing Association, of Houston, Texas; William G. Hesse & Son Mfg. Co., of Leavenworth, Kans., and the Los Angeles Trailer Co., of Los Angeles, Cal. The Association now has members in the following states: Massachusetts, New York, Pennsylvania, Ohio, Michigan, Wisconsin, Kansas, Texas and California.

"Oh, trucks are too expensive to operate," is the occasional youl of the folks who don't know and refuse to find out. If there is anything more expensive to keep up than a stable of horses, we want it shown to us. Feed costs as much as breakfast grain for your own table. There isn't much consolation spreading a nightly feast for rats and mice eitheryet they are always at the banquet as unbidden guests. And if you think that oats and the like are going down, you might run around the corner and consult any farmer. He'll just stand and grin.

Personal Items

Clinton Amorous, recently major with the aircraft zone in France, has been made Chicago manager of the Locomobile Company of America.

Bruce E. Anderson, formerly with the Ideal Engine Co., has been appointed general manager of the Lansing Body Co., Lansing, Mich., succeeding Frank Thoman, who has retired from the managership, but retains his position on the board of directors.

E. H. Beacham has resigned as assistant to A. C. Barley, president of the Barley Motor Car Co., to accept a position with the Walden W. Shaw Co., Chicago.

F. B. Beck has been placed in charge of the export department of the Pennsylvania Rubber Co., in the absence of D. D. F. Yard, sales director of the export division. This office was recently opened in the Woolworth Bldg., New York City.

Major A. B. Browne has been made chief engineer and director of sales of the A. J. Detlaff Co., Detroit, Mich. Major Browne was formerly connected with the Motors and Vehicle Division of the Army.

J. D. Chapelle has been made advertising manager of the G-O Tractor Co., New York City.

A. L. Ditter, formerly general manager for the Northwest Body Co., has been appointed sales manager for the Field Mfg. Co., Owosso, Mich.

F. G. Echols, for a number of years general manager of the small tools department of Pratt & Whitney Co., has been made vice-president of the Greenfield Tap & Die Corp., Greenfield, Mass.

J. W. Florida has resumed his old position of assistant manager of the Philadelphia Branch of the Locomobile Company of America. Mr. Florida has been serving as lieutenant colonel of the Motor Transport Corps in France.

H. C. Hall has been appointed district sales supervisor of the states of Nebraska and Iowa, for the Four Wheel Drive Auto Co., Clintonville, Wis., with headquarters at Milwaukee, Wis.

H. L. Hall has resigned as Chicago branch manager of the Swinehart Tire & Rubber Co., to take charge of the Chicago office of the Troy Carriage Sunshade Co., manufacturer of Troy windshields and specialties. E. A. Holmes, who has been connected with the Philadelphia service station of the Rowe Motor Co., has been appointed eastern sales manager. J. Milton Zimmerman will have charge of the Philadelphia branch.

R. Jackson Jones has been promoted district sales promotion supervisor for the Traffic Motor Truck Corp., St. Louis, Mo.

J. L. Justice, for the past three years associated with the Maxwell Motor Co., has been appointed general sales manager of the National Wire Wheel Works, Inc. He will make his headquarters in the general offices of the company, which are now located in the Book Bldg., Detroit, Mich.

O. A. Loew has become production engineer of the New Era Spring and Specialty Co., Grand Rapids, Mich. He was formerly with the Hayes Mfg. Co., Detroit.

William V. Logan has been appointed manager of pneumatic truck tire sales by the United States Tire Co., New York City.

W. E. Millar has been appointed Pittsburgh district manager of the Cleveland Milling Machine Co., of Cleveland, Ohlo.

H. I. Miner has been appointed sales manager of the Cleveland Milling Machine Co., Cleveland, Ohio.

Chas. A. Neville has been appointed sales manager of the Hinkley Motors Corporation, Detroit, Mich.

Ralph O'Reilly has been appointed sales manager of the Sparks-Withington Co., Jackson, Mich.



S. Gordon Hyde Who has recently been made advertising manager of the Buda Company, Harvey, Ill.

- J. Murray Page has been appointed western district manager of the Locomobile Company of America.
- R. W. Paim, South American representative of the Pennsylvania Rubber Co., Jeannette, Pa., sails July 1 for Latin America.

Lou J. Reinstadtler has been appointed city sales supervisor for the Traffic Motor Truck Corp., in St. Louis territory.

Geo. W. Schermuly, Milwaukee, Wis., factory representative for southern Wisconsin territory, has recently taken on the line of the Parker Motor Truck Co.

George S. Shugart, following the resignation of Joseph C. Weston, has been appointed general sales manager of the United States Tire Co., New York City.

V. M. Smith has recently been appointed general superintendent of the Supreme Motors Corp., Ashtabula, Ohio.

Dan C. Swander, vice-president and supervisor of sales of the Standard Parts Co., Cleveland, Ohio, is visiting manufacturers in England, France and other European countries, with a view to investigating present and probable requirements in the motor car, truck, trailer and tractor fields.

O. E. Szekely, formerly chief engineer and production manager of the tractor department of the Velle Motors Corp., has joined the Grid-Iron-Grip Co., Rock Island, Ill. He will have charge of engineering and production. A general engineering laboratory will also be opened to be operated as the O. E. Szekely Co.

O. S. Tweedy, who recently resigned from the L. A. Young Industries, Inc., will become vice-president of the Dryden Rubber Co., Chicago, Ill., on September 1.

L. H. Ward has been appointed branch manager of the New York branch of the Bearings Service Co. He was formerly branch manager at Philadelphia.

C. K. Whidden, formerly assistant manager of the motor truck thre department of the United States Tire Co., New York City, has been made manager of the solid motor truck tire sales of the company.

C. E. Wilson, formerly associated with the Westinghouse Electric & Mfg. Co., has been appointed manager of the motor equipment division of the Remy Electric Co. Mr. Wilson will supervise engineering and sales at Detroit and at the Remy works at Anderson, Ind.

J. C. Witwer, assistant superintendent in charge of production for the International



Henry Beneke
Elected vice president and treasurer of Beneke & Kropf Manufacturing Company, Chicago, successor to Findeisen & Kropf Manufacturing Company.



Lieut. Richard A. Oglesby Who has become identified with the sales organization of the Eisemann Magneto Company, Brooklyn, N.Y.



Dan C. Swander
Who has recently been promoted
to the position of vice president
and supervisor of sales of the
Standard Parts Company, Cleveland, Ohio.



Homer L. Schneider
Who has recently joined the
truck sales organization of the
Grant Motor Car Corporation,
Cleveland, and will cover western
territory.



Joseph C. Weston Who has been elected vice president and a director of the Ajax Rubber Company, Inc., New York City.



Harris N. Pickett Who has been appointed advertising manager of the Ohio Trailer Company, Cleveland, Ohio.



John G. Utz Who has been made vice president and supervisor of engineering of the Standard Parts Company, Cleveland, Ohio.



F. W. Marshner
Who has been appointed manager of the Detroit branch of the New Departure Manufacturing Company, of Bristol, Conn.

India Rubber Corp., South Bend, Ind., has been promoted to the position of factory manager.

D. D. F. Yard, sales director of the export division of the Pennsylvania Rubber Co., Jeannette, Pa., will sail for Honolulu, enroute to Australia, Straits Settlement, New Zealand, China, Japan, India and South Africa in the interests of the company.

St., now occupied by the Chicago Motor Club, and will begin immediately the construction of a service station. The service department will be moved there from the factory at 2100 Indiana Ave.

Root & Van Dervoort Engineering Co., East Moline, Ill., manufacturer of the Moline-Knight car and R & V automobile and tractor engines, announces that its capital stock has been increased from \$1,346,200 to \$7,500,000. Manufacturing facilities and production will be greatly increased.

Dependable Truck & Tractor Co., Galesburg, Ill., is now in production, and has under construction its second factory building. Plans are being made for a third building, which, when completed, will give the company 75,000 sq. ft. of floor space.

Huffman Bros. Motor Co., Elkhart, Ind., has purchased additional ground adjoining its factory, which will be used for expansion purposes, as the company is rapidly outgrowing its present quarters. The company is also making arrangements for the extension of its sidetrack and loading facilities. The company's working force has been almost doubled within the last two months.

Commerce Motor Car Co., Detroit, Mich., has plans under way for a structure to replace the paint shop, recently destroyed by fire. Regular production of Commerce trucks will be continued, arrangements having been made whereby painting and woodworking for the trucks will not be impaired.

Shaler Axle Co., Detroit, Mich., has increased its capitalization from \$200,000 to \$500,000.

Dort Motor Car Co., Flint, Mich., announces the opening of a factory branch in the Ehret Bldg., Fifty-eighth and Broadway, New York City. This branch will handle the company's eastern wholesale business,

Factory News

General Motors Corp., Detroit, Mich., announces an increase in the capital stock of the company from \$370,000,000 to \$1,000,000,000. The total capital is divided as follows: Debenture stock, \$500,000,000; common, \$500,000,000; preferred \$30,000,000.

000,000; preferred, \$30,000,000.

Gill Mfg. Co., Chicago, Ill., has purchased from the Chicago Canal & Dock Co. a tract of ground comprising 213,450 sq. ft. on South Chicago Ave., extending from East Eighty-third to East Eighty-fifth Street. Construction work has already been begun on the first unit of a factory to be erected on the newly acquired property. With the completion of this unit, in about ninety days, the manufacturing capacity of the Gill plant will be doubled. The company has increased its capital stock from \$200,000 to \$400,000.

Vesta Accumulator Co., Chicago, Ill., has purchased the building and land at the southwest corner of Michigan Ave. and 29th



Hilton W. Sofield Who has been made vice president and general manager of the Commercial Car Unit Company, Philadelphia, Pa.



S. W. Prussian
of the Guaranty Motors Company, Cambridge, Mass., which
has recently announced additions
to its line, and is building up
an increasing volume of export
business.



Ed. Feldhauser
Who has been appointed district
sales supervisor of the FourWheel Drive Auto Company,
in Missouri, Oklahoma and the
eastern half of Texas, with
headquarters at Kansas City.



F. M. Small
President of the new MartinParry Corporation. Before the
consolidation of the two companies Mr. Small was president
of the Martin Truck & Body
Corporation.



Cecil B. Warner
Who has recently been appointed chief engineer of the Nelson Motor Truck Company. Mr. Warner was formerly chief engineer of the Gramm-Bernstein Motor Truck Company.

and will serve the territory supplied formerly by the New York distributor; namely, Manhattan, Long Island and portions of Connecticut and New Jersey.

Kalamazoo Motors Corp., Kalamazoo, Mich., has awarded a contract for the erection of a machine shop, one story high and covering about 2000 sq. ft. of floor space. Plans are also provided for a building for the stock room. These changes will double the capacity of the present plant.

Lansing Body Co., Lansing, Mich., has begun the erection of a building which will double its floor space.

Triangle Motor Truck Co., St. Johns, Mich., has increased its stock from \$100,000 to \$200,000. It contemplates making a large addition to its plant so that its production of 1½ and 2½-ton trucks can be increased to 500 monthly.

Bound Brook Oil-Less Bearing Co., Bound Brook, N. J., is erecting a new machine shop and office building of concrete and steel construction, 100 by 180 ft. This new building will be on Lincoln Boulevard, adjoining the present foundry.

Larrabee-Deyo Auto Truck Co., Binghamton, N. Y., has increased its capital stock from \$300,000 to \$500,000.

Hanes Rubber Co., Winston-Salem, N. C., has recently announced plans for the expansion of its plant. The rubber plant, 80 by 200 ft. and two stories in height, is to be doubled in size, and two textile mills are to be erected to furnish the cotton materials used in making the tires. Seven warehouses for rubber and textile supplies will be located near the proposed textile mill. The company plans also to build a village for its employees.

General Tire & Rubber Co., Akron, Ohio, has added another building to its plant. This addition, which is to be used as a vulcanizing department, is a thoroughly ventilated, day-light building. The vertical vulcanizers, instead of being sunk in the ground, as is the usual practice, will extend from the first floor up through the ceiling. The tops of the vulcanizers will be accessible from the second floor, where the men will work, and the temperature will be no higher than in any other part of the factory. The first floor will be used as a storage room for molds and cores. The building will be equipped with 21 vulcanizers capable of curing 3000 tires daily.

Timken Roller Bearing Co., Canton, Ohlo, will build a branch factory at Columbus. Between \$1,000,000 and \$1,500,000 will be spent on buildings and machinery and about 700 men will be employed. The factory will be of modern construction, with saw-tooth roof, and a site of about 10 acres has been acquired to allow for expansion. It is planned to have the plant in operation in about three months.

Owen Tire & Rubber Co., Cleveland, Ohio, recently organized to make solid and pneumatic tires and tubes, is planning to increase its factory capacity.

White Co., Cleveland, Ohio, announces an increase in its capital stock from \$16,000,000 to \$20,000,000.

Northwestern Chemical Co., Marietta, Ohio, announces the completion of its new Canadian factory. The Norwesco line will now be manufactured in Canada and placed on the market in containers of the Standard Canadian size. Prescott W. Robinson will be manager of the branch, and will also have charge of sales in the Eastern Provinces, with offices in the Drummond Bldg., Montreal. E. Victor Vallance will have charge of Manitoba, Saskatchewan and Alberta sales, with offices in the Confederation Life Bldg., Winnipeg, and I. D. Cross, with offices

at 77 O'Farrell St., San Francisco, will have charge of British Columbia sales.

international Motor Co., Allentown, Pa., is planning to build an assembly plant to cost \$150,000.

Hero Manufacturing Co., Philadelphia, Pa., has been organized to manufacture an internal gear axle.

Removals and Trade Changes

Flat Metal Mfg. Co., Chicago, Ill., maker of welded steel tubing, bumper bars, mouldings for fenders, etc., announces that, to avoid confusion with other firms of similar name, it has adopted the above title. The firm was formerly known as the Art Metal Mfg. Co.

Standex Mfg. Corp., Chicago, Ill., manufacturer of the Standex lubricating system for Ford cars, has taken over the Detroit Gasoline Gauge Co., of Detroit. All machinery and other physical property of the Detroit company will be removed to Chicago, and the gauge in future will be marketed under the name Standex. The gauge is made to fit all Fords except the sedan. A special sedan model is now ready for the market.

National Spark Plug Co. is now the name of the former Bergie National Spark Plug Co., Rockford, Ill. The company states that the confusion arising from the use of the two names led to the adoption of the new name. There will be no change in the officers of the company nor in the management.

Kenosha Wheel & Axle Co., at present located at Winthrop Harbor, Ill., is preparing to move its entire plant and workmen to Kenosha, as soon as the building situation in Kenosha permits of the construction of its new factory.

South Bend Motors Co., South Bend, Ind., has taken over all physical assets of the South Bend Motors Co. and has purchased a new plant, having about \$0,000 sq. ft. of floor space. The company will continue the manufacture of motor driven fire apparatus and an interurban truck for long haul transfer work, built to stand higher speed than the usual commercial truck. It will have a regular standard fire truck chassis and a heavy duty low speed motor with large bore and stroke.

The Federal Corporation has recently been organized at Springfield, Mass., to take over the assets of the Gibson Hollister Co., and will market the Jumbo spark plug. This company has also taken over the Simonds Mfg. Co., of Boston, maker of soaps, cleaners and lubricating greases. Herbert P. Linnell is president of the new company.

Auto Body Co., Lansing, Mich., has purchased the plant of the Acme Engine Co., of the same city.

Okonite Company, Passaic, N. J., announces the removal of its executive offices from New York City to the factory at Passaic, N. J. Hereafter all communications should be sent to Passaic.

Niagara Brass Mfg. Co., Inc., announces the removal of its foundry and machine shop from Buffalo, N. Y., to Lockport, N. Y.

American Motor Truck & Tractor Co., New York City, has purchased the factory and land of the Portland Mfg. Co. at Portland, Conn., and will convert it into a plant for the manufacture of trucks and tractors. The building is 85 by 350 ft. and has a railway siding extending entire length of building.

Bethlehem Motors Corp., Allentown, Pa., announces that it has, for some time past, been working on an arrangement by which it will take over the North American Motor Co., of Pottstown, Pa. Reorganization plans call for an increase of the shares of capital stock to 130.000.

Cook & Swan Co., Inc., New York City, has succeeded to the business of the Cook Oil Co., formerly the N. B. Cook Oil Co., and the Alden S. Swan & Co.

International Leather & Belting Corporation, New York, N. Y., has joined its interests with those of Alexander Brothers, Philadelphia, Pa. The manufacturing and executive organizations of both concerns will remain intact. This union will give belt users international service and distribution under the name Alexander.

Nemours Trading Corp., New York City, has taken over the business heretofore conducted by the French-American Constructive Co., Allied Industries Corp., All-Americas Assn., Inc., Merchants' & Manufacturers' Exchange, New York, and other companies, and is now in position to handle effectively export and import business.

Walter Motor Truck Co., New York City, announces that it is now occupying its new quarters at 227-43 W. 61st St. The company was formerly located at 110 West End Ave.

Steel Products Co., Cleveland, Ohio, has recently purchased the land and factory buildings of the Parker Rust Proof Co., at Detroit, Mich. There are three buildings beside the main building, with a combined floor area of about 65,000 ft. The Steel Products Co. will continue operations at its Hart Avenue plant, and will take possession of the new plant September 15. Facilities for increased production of drag links, starting cranks and rod assemblies are planned.

Long-Wear Rubber Co., Elyria, Ohio, has taken over the entire production and sales of the Quality Tire & Rubber Co., of Anderson, Ind., maker of Quality cord and fabric

New Home of Storm Manufacturing Company

On and after August I, the Storm Manufacturing Company, of Thompson, Iowa, will be located in the building shown at the right, which is at Fourth Street and Sixth Avenue, South, Minneapolis, Minnesota. The Iowa shops will be continued temporarily for manufacturing purposes. This company makes cylinder reboring machines, reamers, jigs and straightening gages, valve port renewing tools, main bearing babbitting and boring tools, piston vises and special pistons.



tires. Plans of expansion, now under way, contemplate a daily production of 20,000 pneumatic and solid tires. Frank W. O'Brien, gen. mgr. of company, with headquarters at Elyria, will have charge of factories.

E. M. Landis Co., Toledo, Ohio, has been incorporated to take over the business of E. M. Landis, 6 N. St. Clair St., and to manufacture a new kerosene carburetor and automobile lock. A. J. Hilt has been made treasurer and C. E. Shanteau, secretary of the new company. They were formerly associated with the Willys-Overland Co.

Hurlburt Motor Truck Co. has been consolidated with the Harrisburg Mfg. and Boiler Co., of Harrisburg, Pa. The Harrisburg company is well-known as a manufacturer of steel and steel products, motor trucks and tractors. The Hurlburt plant at Third Ave. and Harlem River will be maintained as a service station for Hurlburt users in the metropolitan district.

Electric Storage Battery Co., Philadelphia, Pa., announces the removal of its service station at St. Louis, Mo., from 21st and Walnut Sts. to 3408 Lindell Ave., where it has additional equipment and enlarged facilities for testing, recharging and repairing batteries of all makes.

Hays Tire Co., Waco, Texas, has purchased the entire stock of automobile accessories of the Smith-Perry Electric Co., of Dallas, Texas. The Hays company will continue to handle the same lines of goods as were handled by the Smith-Perry company. A branch store has been opened at Hamilton, from which the trade of Hamilton county and from the oil fields in counties adjoining, will be handled.

Briggs & Stratton Co., Milwaukee, Wis., has taken over all rights, titles and manufacturing privileges of the Smith Motor Wheel, formerly owned by the A. O. Smith Corporation of the above city.

S. F. Bowser Co., Ltd., Toronto, Ont., has recently been reorganized to operate as a strictly Canadian organization, financed and managed under Canadian control. This company has, for a number of years, been manufacturing and selling Bowser gasoline and oil pumps, tanks and storage systems under control of the parent company at Fort Wayne, Ind. H. C. Christie, who has for a number of years been connected with the Canadian company as sales manager, has been made manager and E. E. Cummings, factory manager. The other officers are: S. F. Bowser, president; S. B. Bechtel, vicepresident; H. J. Grosvenor, secretary, and W. G. Zahrt, treasurer.

New Agencies

Cohen Motor Co., New Britain, Conn., has been appointed distributor of Armleder motor trucks in New Britain and vicinity.

A. S. Edwards, Stepney Depot, Conn., has been appointed distributor of Armleder trucks in Stepney Depot and vicinity.

W. C. Thomas, of Jacksonville, Fla., has taken the agency for the Indiana truck in southern Florida, with headquarters at Tampa.

E. C. Cone Motor Co., Marion and Fortune Sts., Tampa, Fla., has taken on the line of Stewart trucks.

Woodruff Machinery Mfg. Co., Atlanta, Ga., has been appointed to distribute Armleder motor trucks in Atlanta and vicinity.

Morris-McLoney Co., Springfield, Ill., has been appointed distributor of the Oneida truck in Sangamon, Christian, Montgomery and Macoupin territory. George C. Blee is truck sales manager.

F. J. Swigart, Springfield, Ill., has been appointed distributor of the Master truck

in central Illinois territory and has opened a sales agency at 918 East Capitol Ave.

Manbeck Motor Sales Co., 319-23 East Fourth St., Des Moines, Ia., announces that a company has been organized by Earl N. Manbeck, Earl K. Chaffin and G. O. Jamesson, to take over the distribution of the Maxwell car and truck for Mason City and adjacent territory. The Manbeck Motor Sales Co. controls distribution of Maxwell cars and trucks in sixty counties in Iowa.

Smith Bros., 512 Vine St., Lexington, Ky., have been appointed distributor of Armleder trucks in Lexington and vicinity.

Scott Motor Truck Co. has been formed by Walter A. Scott, to distribute Rainier trucks in Brooklyn. Temporary headquarters have been opened at Smith & Schermerhorn Sts., pending the completion of a new building for the firm.

Aetna Motors Corp., Inc., New York City, will handle Wilson trucks, made by J. C. Wilson Co., in metropolitan territory, eastern New York as far as Albany and Connecticut and northern New Jersey.

Rainier Motor Corp., New York City, announces that its export department has closed contracts with the New York Oversea Co., 17 Battery Place, New York, covering the sales of Rainier trucks in Australia and New Zealand. Contract has also been closed with Haller-Kopsland & Co., Christiania, covering Norway, and with the Youroveta Home & Foreign Trade Co., 165 Broadway, New York, covering Greece.

Rainier Motor Corp., New York City, announces the appointment of the following distributors for the sale of Rainier trucks: Hinkel Motor Truck Corp., 6512 Carnegie Ave., Cleveland, Ohio; Sturtevant-Jones Co., 1214 Jefferson Ave., Toledo, Ohio; McKeon & Mesharer, Wilkes-Barre, Pa.; Acme Garage, Allentown, Pa.; Frey & Young, Lancaster, Pa.; B. E. Hildreth, Springfield, Mass.; Federal Sales Co., 727 River Ave., San Antonio, Texas; Alabama Motors Co., 1700 Second Ave., Birmingham, Ala.; W. P. Zwilling, 743 West Church St., Elmira, N. Y.

John Simmons & Co., 110 Centre St., New York City, has been appointed eastern distributor for the Nelson Motor Truck Co. The territory of the company includes New England, New York and parts of New Jersey and eastern Pennsylvania. George Lyons is manager of the domestic department and H. F. Belman, manager of the export department.

R. E. Taylor Corp., Seventh Ave. and 37th St., New York City, has been appointed distributor of the Signal truck in the states of New York, Connecticut, New Jersey, Pennsylvania, Maryland and in the District of Columbia.

Sanford Motor Truck Co., Syracuse, N. Y., has recently appointed the following distributors: Northside Hoisting Co., 680 E. 133rd St., Bronx, N. Y.; Fayette Motors Co., Fayette, Ala.; Wm. Penn Auto Co., 111 9th St., Altoona, Pa.; C. L. Kerr, 47 Exchange St., Geneva, N. Y.; C. E. Phillyss, 426 Third St., N. W., Washington, D. C.; Beverly Garage, Staunton, Va.; A. A. Williams, Evergreen, Ala.; H. H. Cornick, Cornick's Garage, 370 Chenango St., Binghamton, N. Y.; James Pritchard & Sons, Ithaca, N. Y.

Utica Standard Service Co., Utica, N. Y., has been appointed distributor of Armleder motor trucks in Utica, N. Y., and vicinity.

Northwest Auto Co., Portland, Ore., will handle Acason trucks in Portland. Fred W. Vogler heads this company.

Aktieselkabet Autocar Co., Copenhagen, Denmark, has been appointed distributor of Acme motor trucks in Denmark, Norway, Sweden and Finland. Frantz Nehammer is president of the new company.

16,700 Miles at Repair Expense of \$21.70

Although the "back to the soil" movement has been going on for years, there remain, in all parts of the country, a number of untilled and half tilled farms. This condition was largely attributed to the inaccessibility of these farms and their distance from the railroads and markets. With increasing use of motor trucks, excuses no longer hold good.

In 1917, Roy O. Thomas decided to cease being a cog in the wheel of industry in one of our American cities and to seek his livelihood on a farm. Accordingly, he bought a farm about 21 miles southeast of Muskegon, Mich. The chief product of his farm was apples, and Mr. Thomas immediately decided to transport his apples to market by motor truck, and accordingly purchased a 2-ton Acme truck.

The first winter of his trucking experience was worse than the usual Michigan winter, which, at its best, is nothing to boast of. Mr. Thomas had to battle with excessive snow drifts. He did not miss a single trip and delivered in all more than 10,000 bushels of apples to Muskegon grocers during the winter. The average load of apples he carries is about 126 bushels and it requires about one and one-half hours to make the trip from the farm to the city. On the banner day 204 miles were covered and 504 bushels of apples were put in storage.

During the off season for apples Mr. Thomas does not let his truck stand idle. He hauls household goods and does general delivery work. He frequently carries furniture from Muskegon and Grand Rapids to Detroit and from Detroit to various parts of Michigan. On one trip he made 446 miles.

Mr. Thomas averages 13 miles to the gallon of gasoline. In all his truck has covered 16,700 miles and has had a repair bill of exactly \$21.70. Of course, this record would be impossible if Mr. Thomas were not a most careful driver. The highway system of Michigan is, as yet, very poor, and the mileage given included every kind of road from the mud and corduroy roads to roads of Furthermost modern construction. more he is capable of taking good care of his machine, but no more so than any careful driver. No matter how good the roads nor the make of the truck it will not hold out under rough treatment. A driver who overloads his truck, who neglects to take the proper care of it, and who runs it at full speed over all kinds of roads must expect to have small mileage and large repair bills. A driver who takes care of his truck, who does not overload it, and who takes poor roads at proper speed, can expect, with the truck which best suits his needs, to get a mileage and repair bill that will almost equal that of Mr. Thomas. With such records to their credit the motor truck on farm will become an absolute necessity, within the reach of every farmer who can be a careful driver, and untilled, inaccessible farms will be an unknown quantity.

How to Arrange and Successfully Stage a **Motor Truck Expedition**

Taking a Caravan of Motor Trucks Over a Several Hundred Mile Trip Means Careful Preparation and Masterful Handling to Get Best Business Results. Some Advice on How to do It

By A. V. COMINGS

NCE the remarkably successful motor truck tour staged by the St. Louis Automobile Manufacturers' and Dealers' Association, described at length elsewhere in this issue, truck dealers in many other cities are contemplating a similar tour in their respective states to emphasize the use of the motor truck in intercity and rural service. Inasmuch as the success of an expedition of this nature depends largely on the preparation made beforehand and on the manner in which the tour is conducted, the following suggestions, most of them the result of experience gained in connection with the St. Louis expedition, are offered to the trade for their guidance in planning future tours. Like any other expedition wherein many participate, a poorly managed tour of this sort will prove worse than none at all. Therefore, dealers in cities that plan a truck expedition of several days' duration will do well to insist upon proper preparation and proper supervision of the caravan of trucks, that each tour may be successful and bring about the most favorable sort of publicity for motor truck transportation.

Advance Preparation

First of all, those dealers of real vision, the ones who are usually just a jump or two ahead of their competitors, will have to "sell" the idea to the rest of the dealers in their cities. With the wonderful results achieved by the St. Louis dealers, this ought not to prove a very hard matter, yet there will be found some truck dealers who will have to be shown.

An entry blank should be printed with spaces for filling in the names and types of trucks entered, both by the dealer and by any customer of his who may be induced to enter a truck.

A place should be given for filling in the style of body on truck, and no truck should be allowed to start unless fitted with some kind of body. A load of some kind, even if only empty boxes, should be carried, to emphasize the need of using trucks loaded at all times. A place should be left on the entry blank for filling in the type of tires, whether pneumatic or solid.

Entries should close several days before the date of starting the trip, and not over fifty trucks should be allowed to enter, as this makes a caravan entirely long enough to handle under the circumstances. No truck over two tons capacity should be entered.

charged for each truck, payable before the caravan started. This covered all general expenses along the way, and defrayed practically all the expenses of the expedition.

With entries assured, the route must be selected, gone over, and all advance preparations along the line must be

The route should be calculated on the basis of not over 75 miles per day, a shorter average if the villages along the route are close together, necessitating many stops.

With the route decided upon, a car containing representatives of the auto trade association managing the tour, and of at least one official of the local chamber of commerce, should go over the route carefully, stopping at every hamlet and village, calling upon leading business men and officers of commercial bodies, outlining the purposes of the trip and enlisting their co-operation in making it a success. Calls should also be made at newspaper offices, and it will be necessary to explain to the newspapers that the tour is not a truck selling scheme, primarily, but that it is to awaken people to the necessity of good roads, and to the economy and efficiency of truck transportation as a new and fast approaching factor in their daily lives.

The St. Louis advance agents took with them large posters, in colors, advertising the truck expedition, and each of these bore a sticker telling the exact date the caravan would reach the city in which it was hung. Many were hung in each city. These posters, suitable for any tour, were secured from the St. Louis Printing & Engraving Co.

Each Driver Should be Supplied With Route

The pathfinders should keep accurate speedometer readings of the distances between stops, and should enter in a log, later to be reproduced and furnished each driver on the tour, distances, bad spots in the roads, railroad crossings, bad hills, and other topographical items that may help.

The advance committee should also get a list of hotels and rooming houses at each night stop, and arrangements should be made for feeding the men on the tour at a contract rate.

Where hotel accommodations will not care for the men, suitable halls should be arranged for at a reasonable rate, and one truck should carry a supply of folding cots to be used by the men wherever

At St. Louis an entry fee of \$25 was this manner of sleeping is resorted to. This plan worked well with the St. Louis expedition. In fact, on several occasions the men occupied cots in the bodies of their own trucks. Plenty of mosquito netting should be taken for this method of sleeping, however.

One detail that should surely be arranged by each pathfinding committee is the place and method of parking the trucks in cities where noon and night stops are made. This matter should be taken up with police departments, the streets decided upon, and the method of parking, together with the time of arrival of the train.

Several methods of parking were used on the St. Louis trip, each according to the nature of the city where it was used. In cities with a public square, the procession simply followed the pilot car around the square, parking parallel with the curb, completely surrounding the square, close to the curb.

In Reference to Parking Arrangements

In cities where there was one very wide main street in the business section, oblique parking down the middle of the street was found excellent, and in other cities oblique parking against the curb was used. If possible, arrangements should be made to clear the streets used for parking of all other parked cars before the arrival of the trucks, although the usual traffic may be allowed to go on undisturbed.

Arrangements should be made with police departments to have an officer detailed to show the arriving caravan exactly where and how to park.

After the pathfinding committee has returned a schedule may be made out for the trip, showing the time of arrival of the caravan at every hamlet, village and city on the route. Plenty of time should be allowed, so that in no place the trucks fall behind their schedule. One of the big things these tours should impress upon people is the absolute reliability of the truck, and for this reason, if no other, the caravan should pull into every city exactly on schedule time. If a little ahead of schedule, the caravan may wait several miles outside a city and go in according to schedule.

With the schedule made out, a campaign of publicity should be carried on through every paper, from the smallest to the largest, throughout the territory covered by the expedition. The time of arrival at each place should be emphasized, and this publicity should be sent to every paper within a zone of twenty miles each side of the route traversed. Thousands who lived many miles from the route traveled by the St. Louis trucks "went to town" on the appointed day and saw the trucks go through. Many even gathered at cross road points to see the caravan.

One thing that should not be overlooked is the opportunity to distribute literature to the crowds along the way telling of what has been accomplished by motor trucks in rural hauling, and what the truck may do both for the farmer and the small town merchant and resident. This literature may be secured from the National Automobile Chamber of Commerce and from the Bureau of Markets, Department of Agriculture, at Washington. Each of these agencies is more than anxious to bring home to the rural and small town dweller the manifold comforts and economies that ensue from the introduction of the motor truck. Distribution of this literature from the caravan should be carefully supervised to eliminate duplication and waste.

While on the publicity subject, it would be well to state that full benefit from the tour will not be enjoyed by the motor truck interests unless a publicity campaign is carried on after the tour is over. The minds of those along the route will be very receptive to anything pertaining to motor trucks after having seen the big caravan in action, and newspapers in all towns traversed should be furnished with good reading matter relative to trucks after the tour is over. A good publicity man, paid for the work, ought to be a part of the tour from its inception till several weeks afterward.

Considerable help in local publicity may be expected from the subagents of those dealers taking part in the tour, located in towns along the way. These subagents should be urged to co-operate in every way possible.

Preparations for the Start

A large vacant lot, well out from the business portion of the city where the tour starts, should be chosen as a rendezvous. On this lot every truck should report on the day before the tour starts, at a specified hour, preferably in the forenoon. It should be supplied with gas and oil and be equipped completely for the start. From the time it reports till the tour disbands, the truck, its driver, and anyone attached to the truck in any capacity, should be under the command and absolute orders of the commander-in-chief of the expedition and his aides.

Right here it is well to state that on the selection of a commanding officer for the expedition depends a great deal of the success of the venture. He should have had experience in handling men, know how to command obedience without being harsh and unreasonable, and know something of the capabilities and limitations of motor trucks on the road.

An inspection of the trucks on the day before the start should be made by someone in authority, who knows when a

truck is fitted to undertake a long trip. No truck should be allowed to start that is not up to standard.

Pictures should be arranged for, for local newspapers, etc., and final instructions should be given drivers and others connected with the caravan.

A drawing should be conducted to determine the place of each entrant in the first day's run, this place going to each truck or group of trucks entered by each firm. It is best to keep together all the trucks of one kind entered in the run.

Each day the order should be changed, so that all trucks will have a chance at the head of the caravan.

Every detail should be arranged on this final day before the start, so that the caravan may start exactly on time on the day planned for the initial run.

On the Road

The start should be made at an early hour, preferably by 7 a. m. With all arrangements made the day before, this ought to be easy.

In the lead should be the pilot car, a passenger car loaned by some local dealer and driven by a man who knows the route. In it rides the commander-inchief, with an aide, who may drop off at any time to carry orders, direct movements of the caravan, etc., according to the directions of his chief.

Following the pilot car will come several passenger cars, carrying representatives of the press, guests, etc. The number of passenger cars should be limited, as it is well not to have too many.

Trucks should keep their places in line throughout the day's run. If, for some reason, one has to drop out for a minor adjustment, it is well to halt the caravan to wait for it to continue.

A truck that has lost its place in line must not try to regain it by passing other trucks, as this leads to accidents. It is well to have an absolute rule covering this, to prevent trouble.

The commander-in-chief gives all starting and stopping signals, and is supreme in authority on all points. A divided authority is fatal to the success of an expedition. One boss is sufficient. He should have a bugler to give ahead and stop signals, and to call in by prearranged signals the scouts, etc.

A motorcycle with side car, for scouting ahead for anything that might interrupt or hinder the passage of the caravan, should be provided, and another to bring up the rear.

Also, at the rear, should travel a passenger car in which should be carried an expert mechanic, familiar with all makes of trucks and the ills they are heir to, so that he could render quick assistance to any truck in the outfit that might need attention.

Bear in mind that the greatest advertising value is secured from the expedition if every truck comes through to the end on time. Have an expert on hand to attend to all the little things that might delay the caravan.

In this connection, it would be well to have two or three of the biggest tire

companies arrange beforehand to send on the trip a full complement of tires, covering any need that might develop on the trip, so that service could be given on the road without a moment's delay.

This was done on the St. Louis trip, even to the motorcycle tires, and resulted in saving time and bringing every vehicle through without delay.

Publicity Programs

In each village where the size of the place justifies it, a short speaking program should be carried through, and at the night stops, which should be picked with care, a snappy program of speaking and moving pictures should be arranged.

As a speaker's stand a truck fitted with a Delco farm lighting plant proved exceptionally good in the St. Louis tour, the light plant furnishing the current for strings of lights around the truck and for two searchlights that illuminated the scene.

This truck is taken to a main corner, and crowds soon gather for the speaking. A definite list of speakers should be planned for, men who can talk to crowds and keep them interested. Good roads, the performance of trucks in farm and rural service, etc., are the subjects to be driven home to the crowds. They are to be sold completely on the modern truck transportation idea.

One truck should carry a complete moving picture projector, and a portable screen, which may be hung against the side of a building on one of the main streets, or across the street. Rural motor truck films may be secured from the big tire companies and from the Highways Transport Committee of the Council of National Denfense, at Washington, addressing Lee L. Robinson, 18th and D Streets, N. W., in this connection.

Hire an expert moving picture operator to handle this part of the program,

Random Hints

Take a noisemaker of some sort along and mount it on the first truck in line. A Lathrop fog horn, worked by a hand bellows, is a good one. It stirs up the inhabitants and lets them know something's doing.

Take a tank truck along, at the tail end, loaded with gasoline and lubricating oil. The Standard Oil Company will doubtless furnish one, very cheerfully. It is a very necessary detail.

Designate one truck as a hand baggage truck. Then pile all grips, suit cases, etc., from the passenger cars, in that truck, and cover closely with a canvas. This will make more room in the passenger cars, prevent scratching them, and the occupants can pick up their baggage at night clean and safe after the day's journey.

Get as many ex-soldier drivers as possible in the caravan. They have learned that discipline is necessary to success of a venture of this sort, are used to holding themselves in hand, and there will be no trouble along the route if the boys who formerly wore the khaki are on the drivers' seats.

KEY OF ABBREVIATIONS

Used in the Specifications of Commercial Cars Listed on the Pages Following

ransmission: B-Lipe-Brown-Lipe G-Lee—Grant-Lees I-CI—Individual Clutch MM—Mechanics Machine Co. UM—Universal Machine Co. UP—Universal Products Co. Cott—Cotta Covt—Covert D-Sea—Driggs-Seabury Det—Detroit Hart—Hartford
K-B—Kinsler-Bennett
M—Mechant & Evans
Spic—Spicer
Ther—Thermoid Universal: Arv-Arvac Rear Axle: Cel-Celfor Drive: B-Bevel Gear Flot—Full Floating

1/2-Fl—Semi-Floating

1/4-Fl—2/4 Floating

1/5-Fl—7/5 Floating Bld-Blood Brothers Ct-Concentric Spur Munc—Muncie Plan—Planetary Prog—Progressive Rock—Rockford Selec—Selective Warn—Warner W-M-Weston-Mott Durst-Durston SB—Spiral Bevel Emp—Empire
Rock—Rockford
Russ—Russel
Sals—Salisbury
Shel—Sheldon
Timk—Timken [-Internal Gear -Torbensen Chie-Chieago Full—Fuller F-Friction Sp—Spur W—Worm O-Own R-Roller C-Chain Cl-Clark Shaft L—Brown-Lipe M—Merchant & Evans (Hele-Shaw) Engine Starter: Au-L-Auto Lite Bosh-Bosch Ignition System: (Make or Type) At-Kt-Atwater Kent Carburetor: B&B—Ball & Ball D—Disc F—Fuller G—Detroit Gear & Machine Clutch: B-Borg & Beck G&D—Gray & Davis L-N—Leece-Neville Bat—Battery
Bosh—Bosch
Berl—Berling
Conn—Connecticut
Delc—Delco Mag—Magneto NE—North East POL—Prest-O-Lite West-Westinghouse Mul-Miller
Strm—Stromberg
Shk—Shakespeare
Sheb—Schebler Au-L-Auto-Lite Eism—Eisemann King—Kingston Cart—Carter Ens—Ensign Flch—Flechter Holl—Holley John—Johnson Spc—Special Till—Tillotson Spld-Splitdorf Mar-Marvel Mas-Master Dyn-Dyneto Zen-Zenith W-Warner 0-0wn H-Hartford Dix-Dixie U-Muncie Bij-Bijur Radiator (Make or Type): Bus-Bush Lubrication: C—Centrifugal Pump
Fo—Force-Feed
FG—Force and Gravity
FS—Force and Splash
Sp—Splash Feed
F—Water Pump 10w Cooled: C-Centrifugal Pump Engine: Cont—Continental
Her—Hercules
H-Sp—Herschell-Spillman
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EM—English-Mersick
Eur—Eureka
Fed—Fedders
Flox—Eloxo
GO—G. & O.
Har—Harrison T-Thermo-Syphon W-Water Per—Perfex R-T—Rome-Turney Stan—Standard Lyco—Lycoming Ster—Sterling Wau—Waukesha Wis—Wisconsin Hovn—Hooven Idl—Ideal JMS—Jamestown P-Water Pump Own—Own Make Opt—Optional H-Honeycomb G-Gear Pump 0-Overhead -- Pneumatic f-Tubular

EXTRA ABBREVIATIONS USED ON ELECTRICS
Battery: Exid—Exide West—Westinghouse Controller: Gn-El—General Electric Co. West—Westinghouse Eip—Full Elliptic S-El—Semi-Elliptic ¾-El—¾-Elliptic S&C—Semi-Elliptic and Cantilever S&¾—Semi-Elliptic and ¾-Elliptic Phil—Philadelphia Motor: Gn-El—General Electric Co. Steering Gear: CAS—C. A. S. Products Co. Governor: C—Centrifugal Cont—Continental Spring Suspension: CC—Cleveland-Canton Row—Rowland
Per—Perfection
Shel—Sheldon
Stan—Standard
Stan—Sterling
Tut—Tuthill
US—United States Det—Detroit GC—Garden City IC—Iron City Del—Delaney
Dup—Duplex
McC—McCanna Kal-Kalamazoo Mar-Maremont Cant—Cantilever W—Worm Warn—Warner Wohl—Wohlrab Simp—Simplex Wau—Waukesha Math-Mather Mon-Monarch Gem-Gemmer Nat-National Dit-Ditwiler Rug-Ruggles Lav-Lavine Mer-Merrill Edis-Edison Pier-Pierce Jac-Jacox

Commercial Car Specifications—Corrected Monthly

The Specification, Chassis Prices, Etc., Are Corrected Each Month From Data Supplied Direct by the Makers. Gasoline Tractor-Trucks and Electric Commercial Cars Will be Found at the End of Gasoline Commercial Cars

(Where prices are not given they may be had on application to the manufacturer)

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, G. C. M. Model	Beok-Hawkeye Bessemer J-2 Beshehen E Brinton F Conioord B Cornitt B Day-Eider C Doane 1919 Geraix G Geraix H Geraix G Gramm-Bernstein Harvey WFA Hewitt-Ludlow Kankakee E Kelly-Springfield K35 Kelly-Springfield K35 Kelly-Springfield K35 Kelly-Springfield K36 Kochler M Marakee E Manka 50 Moreland 19 C Netco H Netlanbal Reliance Patriot Washington Reliance Reliance Rowe CDW Royal Sandow J Sandow J Sandow J Sandow J Sandow J Sandow J Sandow S Sandow S Sandow S Sandow S Sandow J Sandow S Sandow S S Sandow S S S S S S S S S S S S S S S S S S S	3 Ton Denby 25 F. W. D. B. Manly 60 O. K. 2-T Packard 3-E Parker Rennoc M Rowe GW Vint 23 White Ty	3½ Ton Acason L Acme C Armeder KW Atterbury 7D Available H-3 Bessemer K Bethlehem F Clydesdale 90 Corbitt A

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G. C. M. Model	Dave Edger Dav	4 Ton Gabriel F Kelly-Springfield K-45 Kimball 19G Moreland 19G Noble WW4 Packer 4E Parker 4E Riker Sanford 50 Sanford 50 Union C

Pr. Cent of Weight	880 880 880 880 880 880 880 880 880 880	70 70 50 93 580 880 880 880
Сочегног	Wau Cont Cont Cont Cont Cont Cont Cont Con	Wau Dup Pier Simp Simp Own Mon Mon
Steering Gear	Ross Ross Ross Ross Ross Ross Ross Ross	Lav Ross Ross Ross Ross Ross Ross Ross Ros
Rear Tires	40x64 40x64	40x6† 40x6† 40x6† 40x5† 40x7† 40x7† 40x7 40x12 40x12 40x12 40x12 40x12 40x12 40x12 40x12 40x12 40x14 40x14
sariT fron	89999999999999999999999999999999999999	386x6 38x5 38x5 38x6 38x6 38x6 38x6 38x6 38x6 38x6 38x6
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G. C. M. Model	Acason M Acason M Acason M Acason M Available 5 Brockway T Clydesdale 120B Corbitt AA Corbitt AA Corbitt AA Corbitt AA Day-Elder E Denby 210 Fageol Fageol Garford 68 Garford 68 Garford 68 Garford 88 Gram Bernstein Hall Harvey WKA Harvey WKA Harvey WKA Harvey WKA Harvey Bernstein Harvey WKA Harvey Ladlow Kinball Kinsel-Goliath Larabe-Deyo Master BL Moreland 19-J Moreland 19-J Moreland 19-J Moreland 18-J Menominee J Meroland 5-E Parker Flowe FW Royal Royal Royal Royal Royal Royal Royal Sandow L Sandow L Sandow L Sandow S Sandow S Sandow S Sandow S Sandow S Sandow S Standard 86 Stender O' Cuited VX Winter T Winter T Wilsox W Wilsox W Wilsox W Wilsox W Wilsox W Wilsox W	51/2, 6 and 7 To Done 1919 Hall Macer 51/3 Mack 71/3 Mack 71/3 Mack 71/3

Pr.Cent of Weight on Rear Wheels		880 880 800 800 800 800 800 800 800		Per Cent Weight on Rear Wheels	
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Reed Buiteets	Ross Ross Ross	Own Gem Ross Ross Lav Own Cown Ross Spec Spec		Steering Gear	Own WW Ross Ross Own Own WW
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Bore and Stroke	1% x6% 36 5% x7 44 5% x7 44 1% x6% 36	44440700000000000000000000000000000000		Chassis Price	2270 2745 3270 3270 4595 5800 5240 5400
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. с. м. Моdel	5/2. 6 and 7 T Old Reliable CP Sterling 7 World Reliable CP Sterling 7 Wighter 8	The Transloss of the Tr	Electric Commercial	E. C. M. Name and Model Number	Ward WS C. T. 1 Walker M Atlantic 1C Atlantic 1C Atlantic 2C C. T. 2 Ward WB Atlantic 2C C. T. 4 Ward WD Atlantic 3C Couple Gear Couple Gear Couple Gear Walker N Walker N Walker N Walker N Walker N Walker N Walker C Couple Gear

Manufacturers Whose Models Are Included in Specifications on Preceding Pages

Acason—Acason Motor Truck Co., Detroit, Mich.
Acme—Acme Motor Truck Co., Cadillac, Mich.
All-American—All-American Truck Co., Chicago, Ill.
Armieder—O. Armieder Co., Cincinnati, Ohio.
Atlantic—Atlantic Electric Vehicle Co., Newark, N. J.
Atlas—Martin Truck & Body Corp., York, Pa.
Atterbury—Atterbury Motor Car Co., Buñalo, N. Y.
Autocar—Autocar Co., Ardmore, Pa.
Available—Available Truck Co., Chicago, Ill.
Beck-Hawkeye—Beck-Hawkeye Motor Truck Wks., Cedar Rapids, Iowa. Atterbury—Atterbury—Motor Car Co., Buffalo, N. Y.
Autocar—Autocar Co., Ardmore, Pa.
Available—Available Truck Co., Chicago, Ill.
Beck-Hawkeye—Beck-Hawkeye Motor Truck Wks., Cedar Rapids,
Available—Available Truck Co., Chicago, Ill.
Beck-Hawkeye—Beck-Hawkeye Motor Truck Co., Grove City, Pa.
Bethiehem—Bethlehem Motors Corp., Allentown, Pa.
Bethlehem—Bethlehem Motors Corp., Jackson, Mich.
Briccoe—Briscoe Motor Corp., Jackson, Mich.
Briccoe—Briscoe Motor Corp., Jackson, Mich.
Brockway—Brockway Motor Truck Co., Cortland, N. Y.
C. T.—Commercial Truck Co. of Mich., Flint, Mich.
Ciddedale—Clyde Cars Co., Clyde, Ohlo.
Collier—Collier Motor Co., Co. of Mich., Flint, Mich.
Clydesdale—Clyde Cars Co., Clyde, Ohlo.
Collier—Collier Motor Truck Co., Bellevue, Ohlo.
Cornet Automobile Co., 168 S. Water St., Decatur, Ill.
Cometon—Dearborn Truck Co., Corlies, Co., Concord, N. H.
Cometon—Dearborn Truck Co., Corlies, Wis.
Couple—Corplies Motor Truck Co., Corlies, Wis.
Couple Gear—Couple Gear Freight Wheel Co., Grand Rapids, Mich.
Day-Elder—Day-Elder Motors Corp., Waterloo, Ia.
Day-Elder—Day-Elder Motors Corp., Newark, N. J.
Day-Borden—Dearborn Truck Co., Chicago, Ill.
Deflance—Turnbull Motor Truck & Wagon Co., Deflance, Ohlo.
DeKalb—Debkab Wagon Co., DeKalb, Ill.
Denby—Denby Motor Truck Co., Exalb, Ill.
Denby—Denby Motor Truck Co., Chicago, Ill.
Denby—Denby Motor Truck Co., San Francisco, Cal.
Dodge—Dodge Bros., Detroit, Mich.
Dorne—Done Motor Truck Co., San Francisco, Cal.
Dodge—Dodge Bros., Detroit, Mich.
Dorne—Done Motor Truck Co., San Francisco, Cal.
Dodge—Douglas Motors Corp., Omaha, Nebr.
Duplex—Duplex Truck Co., Chicago, Ill.
Frace—Fargo Motor Truck Co., Chicago, Ill.
France—Fargo Motor Truck Co., Chicag Ohio.

Kimbali—Kimbali Motor Truck Co., Los Angeles, Cal. Kissel—Kissel Motor Car Co., Hartford, Wis. Knox—Knox Motors Co., Springfield, Mass. Koehler—H. J. Koehler Motors Corp., Newark, N. J. Kuhn—Kuhn Tractor Truck Co., Seattle, Washington. Lane—Kalamazoo Motor Corp., Kalamazoo, Mich. Lange—Lange Motor Truck Co., Pittsburgh, Pa.

d in Specifications on Preceding Pages

Lapeer—Lapeer Tractor—Truck Co., Lapeer, Mich.
Larrabee—Dayo—Larrabee—Deyo Motor Truck Co., Inc., Bingham.
ton. N. Lumbard—Laverne Automobile Co., Luverne, Minn.
Maccar—Maccar Truck Co., Scranton, Pa.
Mack—International Motor Co., New York, N. Y.
Manly—O'Connell-Manly Truck Co., Wawingan, III.
Master—Master Trucks, Inc., Chicago, III.
Moreland—Moreland Motor Co., Inc., Detroit, Mich.
Minnesota—Minnesota Machinery & Foundry Co., Minneapolis, Minn.
Moore—Moore Motor Vehicle Co., Danville, III.
Moreland—Moreland Motor Truck Co., Los Angeles, Cal.
Muskegon—Muskegon Engine Co., Ch., Minskegon, Mich.
Nyses—B. A. Myers Co., Chenosha, Wis.
Nash—Nash Motors Co., Kenosha, Wis.
Nash—Nash Motors Co., Kenosha, Wis.
Nelson-LeMoon—Nelson & Le Moon, Chicago, III.
Netco—New England Truck Co., Fitchburg, Mass.
Noble—Noble Motor Truck Co., Kendalville, Ind.
Northwestern—Slarr Carriage Co., Seattle, Wesh.
O. K.—Oklahoma Auto Mfg. Co., North Muskogee, Okla.
Ogden—Ogden Motor & Supply Co., Chicago, III.
Old Hickory—Kentucky Wagon Mfg. Co., Louisville, Ry.
Old Reliable—Old Reliable Motor Truck Co., Chicago, III.
Old Hickory—Kentucky Wagon Mfg. Co., Louisville, My.
Oshkosh—Oshkosh Motor Truck Mfg. Co., Detroit, Mich.
Painard—Fanhard Motors Co., Grand Haven, Mich.
Painard—Fanhard Motor Car Co., Detroit, Mich.
Painard—Fanhard Motor Truck Co., Detroit, Mich.
Painard—Fanhard Motor Car Co., Detroit, Mich.
Republic—Republic Motor Truck Co., Straluge, Wis.
Republic—Republic Motor Truck Co., Straluge, N. Y.
Schacht—G. Lapeer—Lapeer Tractor-Truck Co., Lapeer, Mich.
Larrabee-Deyo—Larrabee-Deyo Motor Truck Co., Inc., Bingham.
ton, N. Y.

University of Michigan to Have **Automotive Laboratory**

ANN ARBOR, MICH., July 3-The board of regents of the University of Michigan has provided for the establishment of an automotive laboratory for testing and research. This laboratory will provide co-operative service for inventors, engineers, manufacturers and the public.

It is planned to install two complete dynamometers for engines and accessory testing and also a complete chassis testing equipment for the determination of car efficiency and fuel efficiency.

New York Dealers Extend Membership

NEW YORK, June 28.—The by-laws of the Automobile Dealers' Association, Inc., have been amended to admit all branches of the automobile industry. Any firm or corporation in business in lines allied to the automobile industry is now entitled to associate membership in the association. Each firm will name its representative. Any person having business connections with such firms or corporations is entitled to house membership. If the applicant is employed by any dealer member in good standing, his

application must be approved by the representative of such dealer member.

Russian Co-operative Society to Purchase Automotive Products

The All-Russian Central Union of Cooperative societies has been formed, with offices at 167 Post St., San Francisco. The objects of this union are the purchase of automotive products, etc., on behalf of Russian distributors, and the promotion of commercial intercourse generally, through the control of Russia's stocks of raw materials.

NEW COMMERCIAL CARS









Dual Frame Characterizes the Construction of the Forschler Truck

BEFORE describing in detail the constructional features of the Forschler truck, a few words regarding the history of this company, and how the development of the Forschler truck came about would not be amiss. To begin with, the Forschler Motor Truck Mfg. Co., Inc., of New Orleans, La., is not a newcomer in the field, as this company has been building the Forschler truck for the past four years.

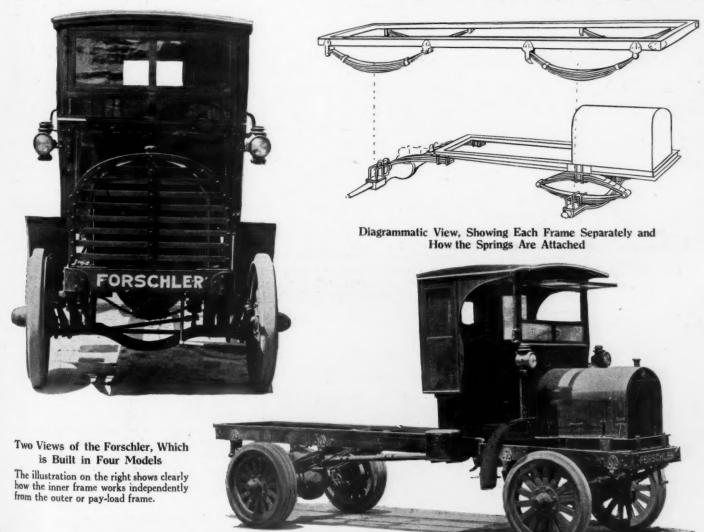
Philip Forschler, who is the vice-president, has been engaged in wagon building and repair work for over twenty

years. He conceived the idea of the dual frame truck after noticing the early repairs that were required on power plants of practically new motor trucks of various makes coming in to his shop. He then set about designing the Forschler truck with the idea in mind of overcoming this unnecessary expense and frequent repairing of the power plant. He built his first machine in September, 1914, which proved so successful that he continued to build them and patented his ideas in 1915. In 1916 the Forschler Motor Truck Mfg. Co., Inc., was organized.

At the present time nearly four hundred New Orleans owners are operating Forschler trucks, proving that the Forschler dual frame principle has exceptional merit. The officers of this concern include: Adolph Dumser, president; Philip Forschler, vice-president, and Frank Brinker, secretary and treasurer.

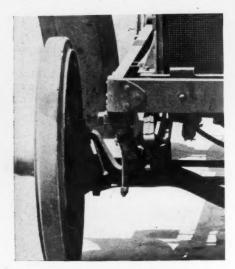
Forschler Dual Frame

The object in designing the dual frame was to eliminate frequent and practically unavoidable wear and tear on the power plant and other working mechanism which is brought about by the usual



method of suspending the working mechanism of a motor truck.

In the Forschler machine two separate frames are used. The inner frame supports the radiator, power plant, transmission, clutch and cab, and is mounted on four separate flexible springs, which are designed to carry this known unvarying weight, independently of the pay load on the truck. The front springs supporting the inner frame are semi-elliptic, while the rear springs are quarter elliptic. The inner frame construction is clearly shown in one of the accompanying illustrations. With this method of mounting the working mechanism of a truck, the driver and all the



Spring Arrangement on the Front Axle The payload frame is mounted on semi-elliptics and the inner frame on full elliptics

mechanism rides softly at all times, whether the truck is loaded to capacity or empty.

The pay load is carried on the outside or regular frame, which is mounted on four quarter elliptic springs. Each frame works independently of the other. Thus, by carrying an over or under load on the outside frame, the springs carrying the outside frame only are affected, while the spring action of the driving mechanism is always the same. By means of this frame construction all the working parts of this truck are fully protected, vibration and excessive road shocks being reduced to a minimum. The maker states that it is a common occurrence for trucks to run 15 to 18 months without even a bearing replacement.

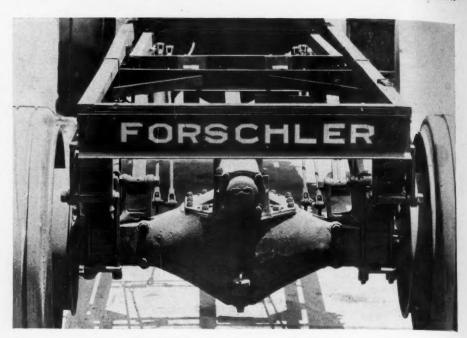
Both frames are made of high-grade rolled panel steel, construction and dual frame principle allowing perfect adaptation to uneven roads without strain.

Built in Four Models

At the present time this concern is confining its effort to four sizes as follows: Model A, 1-ton; A-X, 1½-ton; B, 2-ton, and B-X, 3-ton.

The chassis prices are \$2000, \$2375, \$2750 and \$3450 respectively.

Forschler trucks are built throughout of standard and well known parts, including such units as the Continental Model N and C 4-cylinder engines, Bosch



This View Shows Distinctly How the Two Frames Are Arranged Note also the method of attaching springs to the rear axles

magneto, Zenith carburetor, Fuller transmission, Sheldon rear axle, Ross steering gear, Duplex governor and Hartford universal joints. The Model N engine is used in the two smaller models and the C4 in the larger models.

Besides these regular standard truck models, this company builds a light delivery model and short wheelbase models for handling trailers. Specifications of the models A, A-X, B and B-X will be found in the Commercial Car Specification tables given elsewhere in this issue,

Total Gear Rec	duction;	Motor to	Rear WI	heels
Model	A	A-X	В	B-X
Low				
Second	. 13.2-	1 13.2-1	14.7-1	26.2-1
Third	. 7.8-	1 7.8-1	8.6-1	14.0-1
Fourth				8.7-1
Reverse	. 27.3-	1 27.3-1	30.3-1	56.8-1

The Parker Five-Ton Model M9

HE addition of this new 5-ton model completes the line comprising 2-, 31/2- and 5-ton trucks, built by the Parker Motor Truck Co., of Milwaukee, Wis. The new model No. M9 is a heavy duty job which has been designed for requirements of extreme service. It is geared extremely low in first speed to insure sufficient power for all uses. On low gear the ratio is 51 to 1 and on high it is 101/4 to 1. This high gear ratio has demonstrated conclusively that it is the best means of insuring longevity to the engine and giving the maximum mileage per gallon. These new models have shown

6 miles to a gallon under severe conditions over 4000 miles of hard running.

The engine is a Continental B2, military type. Cooling water is circulated by a large centrifugal pump through the motor and the built-up type radiator which has a vertical tube core.

Standard 1½ in. Stromberg carburetor is used and gasoline is fed by gravity from the Stewart vacuum tank on left side of engine, which in turn is supplied by a larger tank under driver's seat.

High tension Bosch magneto supplies the ignition.

The clutch is a multiple disc Brown-Lipe No. 60.



The Parker Five-Ton Chassis With Dump Body

Transmission is mounted amidship. It is a Warner 4-speed forward and reverse, having 1½ face gears of 5-7-pitch. The drive between the engine and transmission is 1¾ diam., seamless steel tubing with two thermoid joints. This shaft not only cushions the transmission and rear end but eliminates considerable noise.

The rear drive shaft is 2½ in. in diam. and is of Kinsler-Bennett make.

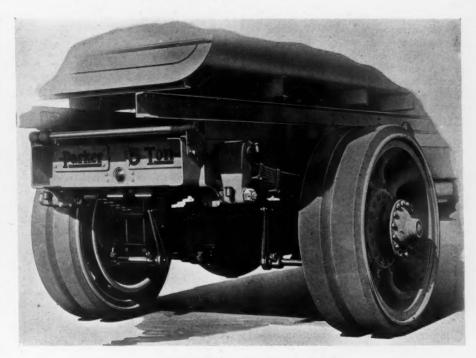
Propulsion is taken through radius rods and the torque through the springs. The rear springs are 60 in. long and 4 in. wide, fully graduated. The front springs are 42 in. long and 3 in. wide. The front axle is a heavy I-beam section equipped with Timken bearings in both wheels and in steering knuckle heads.

Rear axle is Timken, largest make Timken bearings throughout.

Smith cast steel wheels are used, equipped with 36 x 6 in. tires in front and 40 x 6 in. dual, rear.

Steering gear is the largest Ross foreand-aft type, 22 in. wheel.

The frame is 8 in. deep by 3 in. width of ¼-in. high carbon stock, tapered at front end to permit a low frame height above the ground. Frame is thoroughly braced at front end and again just immediately back of rear axles to prevent disalignment but at the same time permitting flexibility at all points in between. In spite of the fact that truck has been designed strong enough to meet all conditions its weight has been kept down to



Rear of the Parker Five-Ton Job

Note the mounting of the tail-light. Closed spring shackles are used to prevent dust and grit from working into the wearing surfaces

8780 lb. with foredoor cab, windshield, water, gasoline and oil. The standard wheelbase is 160 in.; long wheelbase is 180 in.

The loading space is 145 in. back of driver's seat to end of frame; width of

frame 37 in. The equipment includes the Westinghouse starting and lighting out-fit. Price of truck fully equipped is \$5225. If electric lighting and starting equipment is not wanted, the list price is reduced \$125.

A New Type of Rotary Fire Pump Announced by International Motor Company

HE International Motor Company, New York City, has just produced a new Mack improved rotary fire pump, which by an extremely simple invention entirely eliminates pulsation or vibration. In the Mack rotary fire pump vibration is completely overcome by the lateral intake and the lateral discharge.

The water is taken into and squeezed out of the tooth cavities from the sides as well as at the top and bottom. This gives a smooth steady flow of water entirely free from hammering, pulsation or vibration. The result is more gallons per horsepower with less revolutions per minute of the motor.

The nearer the path of any liquid passing through a pump approaches a straight line, the lower will be the resistance offered by the pump to the flow of the liquid. The lower the resistance in a pump the higher its efficiency. The Mack rotary pump delivers 12 gallons per minute horsepower at 120 lb. pressure, or an efficiency of 83 per cent.

Aside from the advantage of lateral intake and lateral discharge, the Mack rotary fire pump also possesses a number of exclusive features.

First, hardened steel pilot gears. The "water gears" in the "Mack" are of bronze. Bronze is very tough, but reasonably soft and susceptible to wear. It is obvious that if one of the water gears is an idler and is driven by the other bronze gear, the pressure between the contact surfaces combined with the sand

grit, which is always present in muddy water, will wear away the bronze and will result in a constantly decreasing efficiency. In the "Mack" the gear shafts are extended through the rear pump head and on each shaft is keyed a hardened cut-steel spur gear. These steel gears are housed in an oil-tight compartment and run constantly in a bath of clean lubricating oil. These steel gears take all the pressure and all the wear. Hardened and ground steel gears running in clear oil will show less wear in doing a certain amount of work than will bronze gears doing the same work in muddy and gritty water.



Mack Rotary Fire Pump Contains Many Worthwhile Improvements

Second, low pressure packing. In the Mack all water which leaks past the "bridge" from the outlet side to the shafts is by-passed through patented grooves into the suction chamber. Therefore, the packing in the stuffing boxes need be drawn up only tight enough to overcome the atmosphere or gravity

pressure instead of the full pump pres-. sure. This cuts down the friction power and increases the efficiency of the pump.

A feature of the Mack rotary fire pump is that it is operated from the ground by one man. The specifications of the new Mack pump are the same as those of the well-known Mack trucks of similar size. four-ton model for motor bus purposes,

The Highway Knight truck was originally designed for overseas war service, The power transmission is taken care of by a single unit consisting of the drive shaft, clutch, gear box, torque tube, speed change lever, brake lever, clutch and brake pedals, and brake rocker shafts, shown in illustration. Entire truck may be disassembled into seven units for shipment.

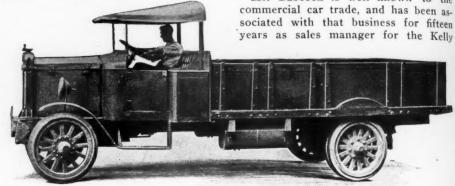
The Highway Motors Company is an Illinois corporation, incorporated for \$100,000. It is a closed corporation, and no stock is offered for sale. The officers are: C. W. Babcock, president; W. G. Harrsch, secretary and treasurer, and R. E. Harrsch, vice-president.

Mr. Babcock is well known to the

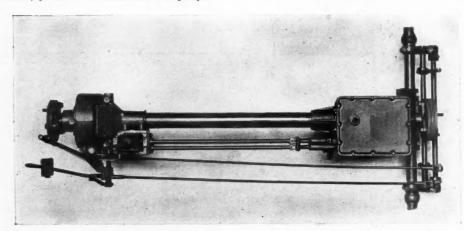
The Highways Motors Company to Manufacture First American **Knight Motor Truck**

HE first commercial truck using Knight motor to be built in the United States, will be offered to the public early in August by the Highways Motors Company, of Chicago, Ill. The Highways Motors Company is a new corporation, which has purchased the patents, designs, manufacturing equipment, and other property of Motor Trucks, Ltd., Brantford, Ont., Canada, and will continue to manufacture same trucks Canadian company built for Canadian War Department.

"In placing the Highways Knight truck on the market, we are not presenting a new and untried truck," said C. W. Babcock, president of the new company.



The Highways Knight Truck. The Power Transmission-Unit is Shown Below



"We do not take the credit for designing and perfecting our product. It was designed by a number of the most prominent automotive engineers, at the request of the Canadian government in 1916, and has undergone a thorough tryout in their service. These trucks have stood three years of hard army service in the Canadian camps from coast to coast, and have proven unusually satisfactory."

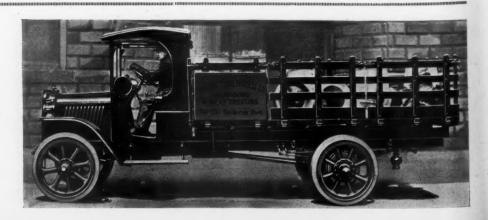
The company will feature a 4 and 5ton model commercial truck, and also a Truck Co., of Springfield, Ohio; manager of the motor truck department of the A. O. Smith Co., Milwaukee, Wis., and connected with the General Vehicle Co., of Long Island City, N. Y.; formerly engaged in the retail business, having operated an agency in Chicago, under name of Moore & Babcock.

Specifications of Highway Five-Ton Model

The Knight engine has a 4-in. bore and a 6-in. stroke, S. A. E. rating, 25.6 h.p.; dry disc clutch; 1/4 in. cold pressed steel frame, 7-in. channel section, 4-in. flange, 38 in. wide; worm drive rear axle; springs 46 in. by 3 in. in front; 58 in. by 4 in. in rear; all wearing parts throughout the truck are provided with removable bushings; all oiling is done by large oil cups having wick feed and holding a six-day supply. The wheelbase is 159 in.; length of chassis overall is 20 ft. 3 in.; width overall is 7 ft.; height from ground to top of frame is 32 in.

New Denby Model for Intercity Hauling Work

The Denby Motor Truck Company, Detroit, announces that this new Denby Model 25, of two and a half to three-ton size, is especially adapted for intercity and express hauling. This model has a thirty-five horse-power engine, a four-speed transmission, taking a maximum reduction of 52-to-1 on low, special frame length and wheelbase and other features peculiarly adapted to this kind of work.



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New One-Ton Old Hickory Truck

A ONE-TON Old Hickory truck of new design has been placed on the market by the Kentucky Wagon Works Co., of Louisville, Ky., and the factory plans to swing into production on the new model about July 15. The truck has many interesting features, evolved by J. F. Murphy, chief engineer of the company, under whose direction the design was developed.

The truck frame is of five inch, six pound section, standard steel channel, with a bumper of the same section forward, held to the side frames by riveted

gussets. The frame is stiffened by three cross braces of 2½-in. iron pipe, a 5%-in. steel rod passing through the pipes and channels and tying them securely together. Fore and aft weaving of the frame is prevented by two diagonal braces of 5%-in. steel, passing through the frame and bevel washers, and drawn tight by nuts on the outside.

Below the radiator a section of 4-in. 5-lb. channel is riveted to the lower flange of the frame, transversely, serving as a stiffener and as a support for the radiator and the front end of the engine.

The radiator, of the Long fin tube type, rests on two spiral springs in compression, being held in place by bolts which pass through these springs and the supporting channel, and through spiral springs below to cush-

ion the rebound of the radiator. Oscillation of the radiator on these springs is prevented through having them of different periods of vibration. The radiator has a cast iron shell with finned top. Cooling system holds 9 gal. of water, and circulation is by thermo-syphon system.

The motor is a Continental Red Seal, Model N, with four cylinders 3¾ x 5 and an S. A. E. rating of 22.5 hp. A Stromberg one-inch carburetor is used, and Eisemann magneto ignition is standard equipment.

Fan Speed Regulated From the Dash

A rather unusual feature is the fan adjustment, handled from the dash, for regulating the amount of air drawn through the radiator by the fan. This consists of a ratchet lever against the dash, rotating a shaft extending forward and culminating in a lever attached to

a spiral spring fastened to the fan adjusting bracket. By means of rotating the shaft, the spring is adjusted to more or less tension, thereby moving the fan bracket in such a way as to tighten or loosen the fan belt. In cold weather the fan belt would be loosened, causing less loss of heat from the cooling water, and in hot weather the belt would be tightened to prevent slippage, causing maximum of cooling effort.

A Borg & Beck single 10-in. dry plate clutch is used, with Grant-Lee transmission. A Pierce governor holds the truck to 18 m.p.h. with rear axle ratio of

734 to 1. Low gear ratio is 2.98:1, intermediate 1.7:1, high 1:1, reverse 3.9:1.

Timken worm drive is used in the rear axle, driven by a tubular propeller shaft, $2\frac{1}{2}$ in. outside diam. One Blood Bros. universal is used.

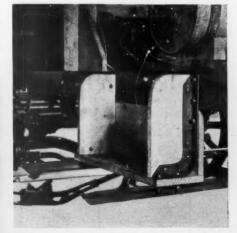
Springs are semi-elliptic, mounted on conventional shackles for the front axle. The rear springs are mounted rigidly at the forward ends, but have a sliding contact in a specially designed bracket at their rear ends. This bracket is unique in that it contains a wearing piece of soft steel, against which the spring bears, and which may be renewed from time to time if necessary. It is lubricated by a grease cup. Another rather unusual feature is that the third leaf of the spring is made short, allowing for a cross pin through the bracket at this point, with one leaf of the spring

below same. This takes up the rebound of the truck body, and prevents spring breakage from that cause.

The spring brackets for the rear springs are held in place by rivets through the web of the side frame, and hooks cast integral with the brackets



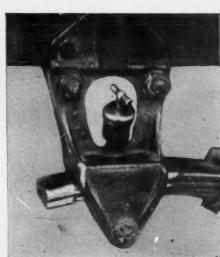
The Old Hickory is Sturdy Looking and Well Proportioned



Details of Old Hickory

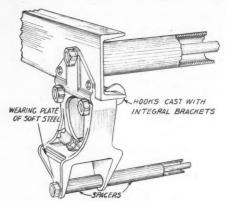
Left: Spiral springs cushion the radiator; Center: Superstructure of the tool box and method of stiffening runningboards; Right: The rear spring



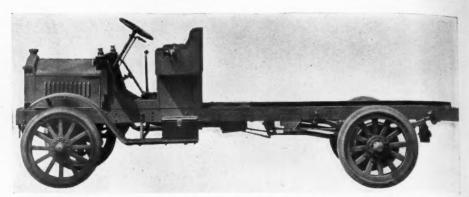


which engage around the lower flange of the frame channel. This makes it unnecessary to weaken the channel structure by riveting through the lower flange, right where most of the tension comes when the truck is loaded.

Full crowned forward fenders are standard equipment, and the running boards are supported by two 1½ x 1½ x ¼-in. angles extending across under the truck, bolted through the tool boxes on either side to supporting angles of the



The Rear Spring Hanger is Attached in a Novel Manner



The Old Hickory One-Ton Job Contains a Number of Well-Known Standard Units

same section in turn bolted to the frame. This gives rigid construction to the running boards.

Brake drums on the rear wheels are 16 x 3 in., with internal expanding drums, the foot and emergency brakes working on opposite quarters of the same drum, which is standard with the new Timken assembly.

All long brake rods are forged flat, with jaws integral, and when assembled the flat section is vertical, thus greatly reducing vibration.

An eighteen-gallon cylindrical gasoline tank is mounted under the driver's seat. A Lavigne steering gear is used.

Front tires are 36 x 3½ and rear tires 36 x 4. Wheelbase is 135 in. The chassis weighs 3470 lb., and when loaded 65 per cent. of the weight is on the rear wheels.

A Boyce motometer is standard equipment.

While no price has been announced, it is expected the truck will sell at approximately \$2000.

Standard Models 76, 66 and 86

The line of Standard motor trucks manufactured by the Standard Motor Truck Company, of Detroit, Mich., are identical in construction with those manufactured during the war by this concern for the United States Government. Being built of standard units, Standard trucks met government specifications with a few slight changes at the start, and were in use in practically every camp of the aviation section, signal corps, as well as in the spruce forests of the Northwest.

The Standard line is comprised of worm-driven, heavy duty trucks of 1-, 2-, 3½- and 5-ton capacities.

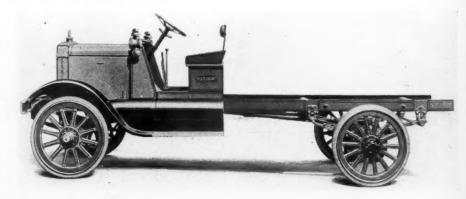
The Standard two-ton model 76 is built along the same lines as the heavier models. The engine is a 4-cylinder, 4-cycle L-head type, with a bore of 41/8 in. and 51/4 in. stroke. It is the three point suspension type, rated at 27.2 hp. S. A. E. The cylinders are cast in block with water jacketed head cast separately. The crankcase and oil pan are separate, making the bearings easily accessible.

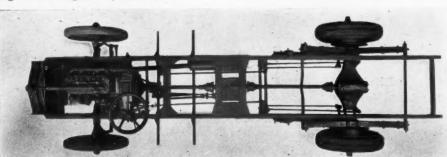
All crankshaft and connecting rod bearings are of the babbitt lined, bronze backed type. The oiling system is automatic—a combination of the force feed and splash types.

The radiator is of vertical tube construction with cast tanks of unusual capacity. In case of accident when one or more tubes have been damaged, the core may be easily removed by simply

removing the top tank. The defective tubes can be taken out, and if necessary the tube holes in the tanks plugged up until new tubes are secured. This feature has proven a time and money saver when accidents have occurred to the radiator miles away from any service station.

Carburetor is a Stromberg, equipped with hot air stove. Ignition is obtained





Four sizes complete the line, 1, 2, 3½ and 5 ton capacity

by the high tension, fixed spark, waterproof type magneto.

The transmission provides 4 speeds forward and 1 reverse, and is suspended from the frame at three points and located amidship where it is readily accessible for oiling and adjustment. Both the transmission and the clutch are of Brown-Lipe make.

In all Standard models Timken-Detroit worm drive axles and Timken bearings are used throughout.

Titanic front springs are used exclusively on the two-ton Standard. Brakes of the internal expanding type are used on all models. The brake rocker shafts are made of solid steel bars with swiveled bronze bushings mounted in bracket to frameside members, which gives perfect alignment and insures brake working under any conditions. Brake levers are keyed and clamped to shaft. Brake rods are ½ in. diam. with ½ in. S. A. E. clevis at each end.

The same general type of units used in the Model 76 are embodied in the 3½-and 5-ton Standards, only, of course, they are proportionally larger and heavier throughout.

Standard chassis are furnished with complete equipment ready for body installation. The Standard Motor Truck Company is in a position to furnish any style of body equipment. In addition to the 2-, 3½- and 5-ton models the Standard Motor Truck Company announces that it is working on a one-ton model which will be in production August 1. A description of this model will be published in an early issue.



The Ace 21/2 Ton Model Has Buda Engine, Brown-Lipe Transmission, Etc.

The above illustration shows the new Ace truck of $2\frac{1}{2}$ tons capacity, just announced by the American Motor Truck Company, Newark, Ohio. Specifications of this model follow: Buda HU engine, $4\frac{1}{4}x5\frac{1}{2}$ in.; Modine Spirex sectional radiator; pressed steel frame, 6 in. wide, $2\frac{3}{4}$ in. flange, full length, $1\frac{1}{4}$ in. thick; Westinghouse generator and self-starter; Exide battery; Ross steering gear; four-speed Brown-Lipe transmission and clutch, transmission mounted amidship; Timken No. 6560 rear axle and No. 1450-B front axle; Spicer joints; Mather springs; Dayton cast-steel wheels; Firestone tires, 36x 4 in. front, and 36x 7 in. rear; steel fenders and runningboards; steel tool-box; Veeder hub odometer; electric front and tail lamps, front lamps operated by steering gear following cut of the wheel; all-weather cab; standard wheelbase, 156 in; dump body, 144 in.: 20 gallon gasoline tank under seat.

The New Keystone Two-Ton Truck

PECIFICATIONS of the new Keystone 2-ton truck chassis show the use of standardized units. This new truck, which is produced in Philadelphia by the Commercial Car Unit Co., of 16th Street & Glenwood Avenue, is made in 2-ton capacity only for the present. The chassis price with solid tires is \$1795 and with pneumatics \$2045.

The features of this chassis are the unit power plant, the two-piece drive shaft and internal gear axle. The wheelbase of the Keystone is 144 in., with a tread at the front of 56 in. and 60 in. at the rear. The springs are semi-elliptic and there are two sets of brakes operating on the drums on the rear wheel. The tires are $34 \times 4\frac{1}{2}$ in. front, or 35×5 in. pneumatic, and the rear are solid, 36×5 in., or 36×6 in. pneumatic.

Control is on the left side with accelerator pedal, and spark and gas are below the steering wheel. The frame is rolled channel 5-in. deep, 33-in. wide in the rear with an insweep to 31 in. at the front. There is 124-in. space back of the driver's seat.

The engine used in this 2-ton Keystone is a 4-cylinder "L"-head, with the cylinders cast in pairs. The bore is 4 in. and the stroke 4½ in., which gives a piston displacement of 226.2 cubic in., developing (by the S. A. E. formula) 25.6 hp. The unit power plant has three-point suspension. A Pierce governor controls the speed of the engine to 1350 r.p.m., equal to a car speed of 16.2 m.p.h. Cooling is by thermo-syphon system and belt-driven fan 16 in. in diameter. The radia-

tor is tubular core type, cushion mounted. Ignition is by a Berling waterproof high tension magneto with the spark manually operated.

Lubrication of this engine is by a combination force feed and splash, and carburetion is cared for by a Zenith automatic with set adjustment. Fuel feed is furnished by gravity from the tank that is under the seat.

The clutch is a multiple disk dry plate. The transmission is a selective sliding gear type with three speeds forward and one reverse. The drive shaft on the transmission to the rear axle is built in two sections and has three universal

joints. The center is supported in a self-aligning ball bearing.

The front axle is drop-forged, $2\frac{1}{2} \times 1\frac{3}{4}$ in., and the hubs are fitted with Timken bearings. The rear axle is a Russel internal gear and the brake drum is $16\frac{1}{2}$ in. The emergency brake is operated by a hand lever and is of the internal expanding type; the foot service brakes are external contracting. Both sets are lined with Raybestos. The springs are semielliptic front and rear, the former $40 \times 2^{1/2}$ in. with 8 leaves, and the rear 52×3 in. with 12 leaves. The spring eyes have self-lubricating bushings. The wheels are S. A. E. artillery type, 12 spokes in the front and 14 in the rear.



Side View of the New Keystone Truck Chassis, With Body and Seat

This new truck has a capacity of 4000 pounds, the permissible weight on the chassis being 5200 pounds including body, load and special equipment. It can be had with either solid or pneumatic tire equipment

The First British After-War Truck Model

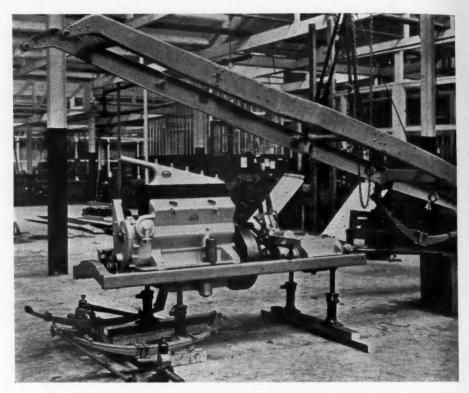
By OUR BRITISH CORRESPONDENT

HE first British commercial car design which can be termed a genuine after-war model is the 2-ton chassis made by Guy Motors, Ltd., of Fallings Park, Wolverhampton, and this exemplifies a policy that there is reason to believe will be very generally followed by chassis makers in the United Kingdom. In its design the keynote has been maintenance. It has been recognized that first cost is only a fraction of the total sum involved during the working life of a truck, and that therefore, manufacturing considerations should not take precedence of users' requirements. The most efficient working at the minimum of cost is what the user wants, and to obtain this the designer has to go for the chief items of expenditure to see how they can be kept down by careful design. Besides tires, the biggest material items are fuel and repairs.

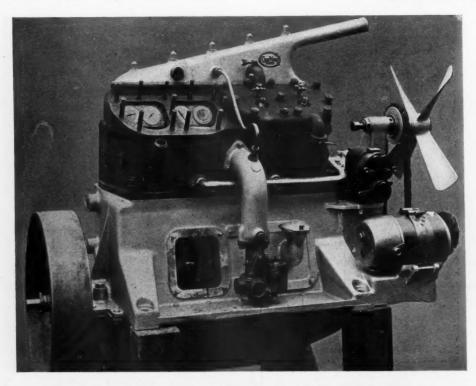
Care to insure easy maintenance and cheap repairs is the most evident characteristic of this chassis. The engine and gear set are carried self-contained on a sub-frame, which is slung from the main frame in such a way that its connections may easily be released and the main frame lifted away, leaving the sub-frame with its mechanism standing on jacks which have been placed under it in anticipation of the frame withdrawal. Thus it is a complete unit available for repair.

But not only by facilitating repairs is the maintenance cost cut down: prevention is better than cure, and the engine and gear set suspension form an excellent example of protection of mechanism from wear and tear strains and stresses. The sub-frame is suspended at three points; at the front by a single spherical trunnion bearing, at the back by two hangers, suspended from a tubular cross member, and at their lower ends carrying the sub-frame on ball and socket joints. Thus is the complete power mechanism insulated from frame distortion.

In the engine, too, the same influences are seen. The accessibility of the crank-



The Chassis Frame Can be Lifted Clear Away From the Sub-Frame Which Carries Motor and Gear Set



Engine With One Cylinder Head and Crank Inspection Plate Removed

shaft, connecting rods and pistons is well emphasized in the illustrations, but in the usual arrangements of cylinder head, fuel economy has also been considered. The poppet valves lie, in fact, at an angle of 45 deg. to the vertical, and thus any extreme pocket is avoided, with consequent gain in engine efficiency, for the seating is formed at the side of the cylinder head. Also, the oil filter is secured on the outside of the crankcase in such a way that it can be withdrawn without loss of oil, simply by unscrewing a single nut, and the pump which works in the oil sump is attached to the upper half of the crankcase so that it does not stand in the way of the base chamber being removed; at the same time, it can easily be withdrawn without disturbance, if necessary.

The only other notable engine feature is found in the method of governing. On the principle that the greatest damage is caused by travelling at high speed, and that momentary engine racing is not so serious, and in fact is sometimes necessary, the governor is incorporated in the front universal joint casing. Linkage is so designed that the throttle opening does not exactly correspond with

the movement of the governor weights, and the throttle remains open until just before the pre-determined road maximum speed is reached. This principle of governor was adopted on the previous Guy model, but modification is seen in the arrangement of the gear box, for the previous design had an indirect geared up fourth speed; in the present model the transmission is direct on the top gear.

One other feature eloquent of the care given to details of working is provided by the tachometer, for it is realized that a correct mileage record is the basis of all working costs. This instrument is therefore incorporated as part and parcel of the chassis where it is driven by a skew gear from the gearset in such a way that meddling with it is impossible. Attention is called to the rear axle, which is designed so that the weight is taken by the axle casing, and all rotating parts turn on ball and roller bearings, and the axle shafts can be withdrawn out-

The Governor is in the Back Cardan Casing and Its Connecting Rod to the Throttle Can be Seen. Note Also the Position of the Clutch Stop, Which Gives It a Good Leverage at Which to Act

ward from the wheel caps, thus leaving ble through the middle of the casing, without need for jacking up the vehicle.

Throughout the entire construction the engineering experience gained by this company in more than six years devoted to building trailers has been utilized in the elimination of useless weight, through the use of high grade material and novel engineering practice. While this trailer is designed to carry any load up to oneton, it is claimed by the manufacturers that it can be pulled anywhere over normally good roads even when loaded to full capacity.

The frame is constructed of three inch steel channel. It is amply braced to provide the strength required and is very flexible. The axles are of automotive type with heavy duty ball bearings.

The springs represent one of the most interesting features, being of quarter elliptic type, which combines the maximum shock absorbing efficiency with extremely light weight. The method of mounting allows perfect spring action regardless of the direction of travel. The right amount of castor is provided to compel the trailer to track perfectly with the car that pulls it and to eliminate any waving or swaying action. The tire equipment is optional, either 28 x 21/2 in. solid clincher truck type or 30 x 31/2 in. pneumatic tires being supplied. bodies are painted gray with black chas-

With a total weight of 1025 lb. for chassis with flareboard and stake combination body it is claimed that this fourwheel trailer weighs less than one-half as much as any trailer offered, of similar capacity.

The model 61-A two-wheel trailer in general follows the standard construction of all two-wheel Ohio Trailers, having draw bar of pressed steel, U-section with specially designed leaf spring, which makes a flexible connection between the automobile and trailer and which absorbs up-and-down shocks occurring on uneven road beds. wheels are mounted on high duty roller bearings, and are equipped with 32 x 3 in. solid pressed-on tires.

The end gate of the cattle rack body drops down, forming a ramp for loading cattle and two stanchions are provided in front.

Two New Ohio Trailer Models

With the announcement of two new models-a 1-ton two-wheel job and a 1-ton four-wheel job-the Ohio Trailer Company, of Cleveland, Ohio, now offers one of the most complete trailer lines produced by any manufacturer.

the differential and crown gears remova-

In the two-wheel trailer line the 800-1000 lb. model is offered at \$110; the 1250-1500 lb. model at \$140. The new model rated at 1500-2000 lb. capacity sells for \$185 with stake panel bodies, at \$200 with cattle rack body.

The four-wheel trailers produced up to the present time have included a twoton model at \$890, a three-ton model at \$1145 and a five-ton model at \$1680. The 1500-2000 lb. model just announced sells for \$375 with cattle rack body, and \$350 with panel body.

The new four-wheel trailer known as model 100-B, is of the reversible type and and is sold complete with either cattle rack body or with panel body as shown in the accompanying illustrations.





The New Ohio Trailers of Two and Four-Wheel Type The capacity of either trailer is 1500 to 2000 pounds

Cleveland Motor Truck Operators Now Have Clearing House in Operation

Cleveland Transportation Association is Organized by John F. Myers, Who Successfully Put the Idea Into Operation in Detroit. Truck Owners Register Trucks Early in Day and Transportation Buyers Look to Association for Quick Service. Movement of Through Freight is Quickened by District Organization

By A. V. COMINGS

OHN F. MYERS, who so successfully launched and managed the Detroit Transportation Association. described at length in the November, 1918, issue of the COMMERCIAL CAR Journal, has formed a similar organization at Cleveland, O., and the Cleveland association is now in full operation and growing rapidly. The association has a suite of rooms on the fourth floor of the Statler Hotel for headquarters, and these rooms serve not only as business offices in the daytime, but as social headquarters for motor truck transportation men in the evenings, and the informal gatherings of the truck men and the interchange of ideas and plans are constantly making for the betterment of trucking conditions in the Ohio city.

The same plan is followed at Cleveland that proved so successful in Detroit. Members list their idle trucks early each day, and Cleveland merchants, manufacturers and others look to the association to furnish quick response to all trucking calls. The biggest buyers of motor truck service in Cleveland are

rapidly being converted to the quick service furnished by the association's clearing house, which is proving more popular every day.

The Cleveland association charges an entrance fee of \$25, with monthly dues of \$10, and there are at this writing fifty-five members with several applications to be acted upon.

The Cleveland association is taking an active part in state and municipal legislative affairs and at present is working hard to force a repeal of Cleveland's tenton total weight limitation on motor trucks. This has resulted in many trucks coming to the city limits with loads at least a ton or more above this figure, which they must unload and later return for under existing conditions.

W. H. Fay, a well known Cleveland business man, is president of the new Cleveland organization.

Mr. Myers came to Cleveland from Toledo, where he organized and put on a successful running basis a similar organization, the Toledo Transportation Association. This organization, which acts as a clearing house between Toledo transportation buyers and owners of motor trucks, is located at 114 North Erie Street, Toledo, and Eugene Mallory is the managing secretary.

Frank C. Hackett, of the Toledo Terminal Warehouse Co., is president.

The organization of the transportation associations in the three cities along the west end of Lake Erie has resulted in a greatly enlarged flow of motor-borne through freight which formerly went by railway, and the future growth of this feature of the business will be tremendous, according to transportation men in the district referred to. The three transportation associations afford a clearing house through which through transportation may be easily arranged and it would seem that in this district, at least, the return loads bureau idea has been very successfully worked out.

Future developments along this line will be watched with a great deal of interest by motor truck dealers in this territory.

Good Roads for Ohio

Great jubilation is being manifested in Ohio automobile circles because of the passage in the State Legislature of the Fouts-Busbey bill, relating to highways, which increases the state and county levies so that the state may obtain the Federal subvention of \$10,000,000. The bill was passed over the Governor's veto by a four-to-one majority, in the House of Representatives, the same ratio prevailing in the Senate.

W. T. Calerdine, of Cincinnati, who is chairman of the Highways Committee of the Cincinnati Chamber of Commerce and also chairman of the Good Roads Committee of the Cincinnati Auto Club. is one of the chief instigators of the bill. He, together with Senator W. A. Alsdorf, secretary of the Ohio Good Roads Federation, worked on the framing of It was introduced into the the bill. House of Representatives in January by Mr. Fouts, chairman of the Highways Committee of the General Assembly. The provisions of the bill may be briefly summarized as follows:

1. It regulates the acts of the State Highway Department and provides the machinery for everything done by that department.

2. It provides for funds for local improvement in any county or township in the tax rate up to two mills for a

county or township in the road improvement program.

3. When a county co-operates with the State or Federal Government in the road improvement program, the County Commissioners can put up to one-half mill on the tax rate without any vote and this fund can be used only for meeting Federal or State aid money in completing that particular improvement.

4. Both of these additions as to the tax rate are outside of the limits or limitations provided by law in regard to the existing tax rate.

Warren-Nash Motor Corp., 18 West Sixty-third Street, New York City, distributor of Nash cars and trucks, has been appointed distributor of the Warner trailer. The Warner line, which is manufactured at Beloit, Wis., consists of a complete series of four-wheel and semi-trailers. The Warren-Nash Company will cover the eastern half of New York state, northern New Jersey and western Connecticut. The Nash-Buffalo Corp. will cover western New York and the border counties of Pennsylvania for the Warner trailer.

Commerce to Rebuild Paint Plant— Plans are being made by the Commerce Motor Car Co. to rebuild the paint shop which was recently destroyed by fire.

A Good-Roads Campaign is Launched in Minnesota

MINNEAPOLIS, June 28.—Plans for a vigorous campaign to be carried on between now and November 2, 1920, in behalf of the paved highway trunk system, which is before the people as an amendment to the Minnesota state constitution, were outlined on "Good Roads Day."

"Good Roads Day" was officially proclaimed and marked with rural picnics, community gatherings and other celebrations at which highway improvement was the topic of discussion.

The Minnesota Highway Improvement Association, the Ten Thousand Lakes of Minnesota Association and a large number of commercial clubs, civic organizations and county boards, as well as the automobile clubs, are supporting the project, which embraces the building, in the next decade, of 7000 miles of hard trunk roads.

L. M. Heifner Manufacturing Co., Philadelphia, Pa., has been incorporated with a capital stock of \$1,500,000. This company will manufacture farm tractors and passenger cars. Plans are under way to begin manufacturing by August 15. The tractor suitable for use on small farms will be composed of standard parts and sell for \$1000 complete.

Linking the Truck With Inland Waterways

Albany Trucking Concern Working in Conjunction With Boat Line Will Give Twenty-Four Hour Service Between Albany and New York, With Attractive Rates

By C. P. SHATTUCK

O-OPERATIVE transportation and the linking up of the motor truck with the inland waterways, are beginning to receive the attention they deserve from operators of trucks interested in intercity haulage. The scope of motor highway transportation companies is limited when compared with the common carriers, for experience has taught us that the truck cannot compete with railroad rates on hauls of several hundred miles.

Efforts have been made by motor highway transportation companies to provide a long distance service by a forwarding system, comprising an agreement among the companies to receive and forward freight, but the plan has certain disadvantages, including the failure to operate on schedule, lack of co-ordination and a smooth working organization. Some operators, in their anxiety to extend their service, have transferred freight without thoroughly investigating the financial standing of the shipper. Losses have resulted and invariably they have been incurred through not properly safeguarding the shipment. Combinations of trucking companies, operating on the forwarding plan have, however, proven success-

Developing Feeder Lines

With the railroads again operating normally, there has been a decrease in the long haul work by motor trucks. The operators are tending toward the development of a haul that is more practical and profitable. Efforts are being directed toward the development of feeder lines and the use of small capacity trucks for collecting merchandise and hauling it to the main or trunk line terminal. The greater capacity trucks

are used to pick up and deliver at the terminal, and the transportation plan is similar to that of a trunk line railroad fed by branch lines.

Possibilities of Inland Waterways

Ultimately, with the construction of trunk line highways and bridges, capable of sustaining loads making for economical motor highway transportation, trucks with trailers will supply long distance hauling and will compete with the common carriers. Until these conditions exist, however, the intercity haul is limited unless the trucks can co-operate with in-

plan. The Hudson River steamboat service, operating between Troy, Albany, Kingston and New York, supplies the connecting link. Not only does the Hudson River valley ship vast quantities of food products to New York but to the Mohawk valley as well. Between Albany and Utica, on each side of the river, are many industries, the products of which are shipped to New York. The undeveloped possibilities were factors culminating in the construction of the canal system connecting Buffalo with New York. While this water transportation affords a cheap service to the large man-

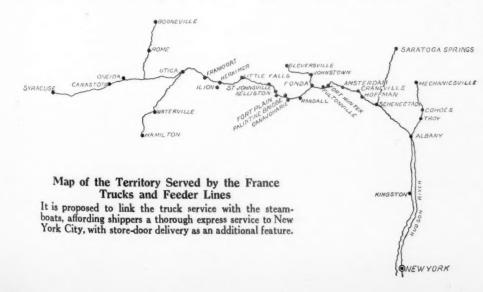


The Two-Ton Mack in Service of W. J. France, Albany, N. Y.
This truck operates between that city and Utica

land waterways, utilizing the latter as the forwarding agent.

Opportunities exist in New York State for successfully prosecuting the ufacturer, it has not, as yet, been developed to a point where small shipments are received, the policy being barge loads or approximately 270 tons. Terminals are provided on this canal but the average shipper does not care to warehouse his product until a sufficient volume of freight is obtained to warrant a barge's stopping at the port.

What is probably the initial step toward linking up motor highway transportation with the inland waters is the effort being made by W. J. France, Albany, N. Y. He is operating motor trucks between that city and Utica. His plan provides for developing general freight and express service between the points mentioned and educating shippers in Syracuse and vicinity to ship by trucks to Albany and thence to New York City by boat. The service offers several advantages to the majority of industries within reasonable trucking distance of the main highway between Albany, Utica and Syracuse as feeder lines are to be developed. The service will be practically an express in that the main line trucks,



served by the feeders, in combination with the boat and store door delivery in New York, will give the shippers a 24-hour service. It is believed that goods shipped in the morning will reach their destination the following morning. The plan provides for a New York trucking company acting as distributor where the shipper desires a store door delivery.

Will Aid Truck Companies

While rates were not gone into at the time this article was prepared it is believed that the low boat rate will enable the motor highway transportation company to make an attractive offer to the shipper, particularly when the speed of the service is considered. The plan includes the forwarding of goods from New York and distribution at all points served by the trucks. The steamboat companies are interested in the arrangement and one of the officers of the company said that his company would cooperate fully with any motor trucking company desiring to forward food products and general merchandise. The official also stated that the possibilities were unlimited, that many manufacturers and producers would patronize the service, that this company would make every effort to facilitate loading at the receiving and distributing terminals, and that special spaces would be supplied at the piers to avoid the possibility of delays. It was also pointed out that the distributing company at New York could, by sending its trucks early to the boat, avoid the delays due to normal conditions existing later in the day.

Albany Concern to Use Boats

The possibilities of the combination motor highway transportation and waterways is also being investigated by a trucking company in Albany, which operates a fleet of trucks between that city and New York. The head of this concern proposes to use 51/2-ton Mack trucks and to contract with shippers on both sides of the Hudson to handle their freight, utilizing trucks at the New York end of the company for distribution. When the Hudson River is closed to navigation by cold weather, use will be made of the highways. The plan is feasible, as only those desiring the more rapid service will ship by trucks in cold weather. The trucks of W. J. France, comprising a 2- and 31/2-ton Mack and a 2-ton G. M. C., are at present engaged in an express service between Albany and Utica, serving the intervening points, some of which are indicated on the accompanying map, which also shows the territory served by feeder lines. These lines pick up in their territory and forward by the France trucks to the East or West. At Utica the France trucks have a terminal from which radiate truck lines to Boonville, Waterville and Hamilton, and another feeder line serves Johnstown and Gloversville. Goods are transferred at Utica for Syracuse, and if the shipper desires he can make connections for Cleveland and Detroit by rail. It is believed that a large volume of business can be obtained from the industries located in the Mohawk Valley, particularly at Gloversville, Amsterdam and vicinity where glove, broom and shirt factories are located. Similarly, material from New York can be distributed.

Supplies the Farmers

The France trucks are providing a rural express service to the farmers in the places touched by the cars. Agents accept orders which are filled in Albany, Schenectady, or the nearest supply point. Seed, machinery, supplies, etc., are hauled by the trucks which do not leave the main highway, the farmers picking up their goods at the agent's store. No attempt has been made to develop the return load or shipment of farm products to the city, although an effort will doubtless be made with the development of the boat service plan.

The rates of the truck service are 25 per cent. less than the railroad express. Mr. France has been engaged in motor

highway transportation between Albany and Utica for over a year, and the fact that he recently added the 3½-ton Mack indicates he is making money. The trucks make the trip to Utica in about ten hours, with many stops, and usually make it in eight hours. The truck leaves Albany at ten in the morning, arriving at Utica at six, the driver stopping over night with his car and making the return trip the following morning.

Would Eliminate the Gyp

Mr. France has had experience with the gyp truckers and believes that legislation should be enacted to protect the dependable company having a large investment in motor trucks and supplying satisfactory service. He has found it difficult to sell his transportation to a shipper who has been stung by the gyp and says that only by a process of education can the prejudice be overcome. "The gyp will eliminate himself," said Mr. France, "but it's a slow process."

Dollar-a-Month Ignition Service for Motor Truck Owners in Chicago Proves Successful

Trucks Restored to Operation Inside Three Hours, Stalling Within Twenty Miles of Chicago

OR one dollar per month per truck the Pellet Magneto Company, of 2453 Wabash Avenue, Chicago, performs the following service for several hundred motor truck owners in the Chicago district:

Guarantees to restore to operation within three hours of call, any truck that has been put out of commission within twenty miles of Chicago through ignition trouble, between the hours of 7 A. M. and 8 P. M.

Holds in readiness a complete substitute ignition outfit for each make of truck owned by a subscriber.

Makes monthly inspections of power plant and ignition, night or day, in owner's garage, and reports conditions.

Instructs drivers in ignition of each one's particular make of truck, so that trouble and repairs may be avoided.

This emergency ignition service for truck owners was started January 1, 1919, by Manager A. E. Urban, of the Pellet company, after several months of preparation and development work among Chicago truck owners.

Two salesmen were put out in the Chicago territory selling the service to the truck owners. The individual owner and the fleet owner alike, were solicited. Newspaper and card advertising were used. So ready was the recognition of the service that the list of subscribers mounted very fast, and fleet owners, par-

OR one dollar per month per truck the Pellet Magneto Company, of owner of 56 trucks is a subscriber, pay-2453 Wabash Avenue, Chicago, ing one dollar for each truck per month.

Three service trucks, built especially for this work, are maintained in the company's service station and garage, and these trucks are equipped with machine shops in miniature to care for any repair that may be necessary when called upon away from the shop. When a call comes in from a stalled truck, one of these service cars starts immediately for the scene of the trouble, taking with it a complete substitute ignition set of the type used on the stalled truck. Arrived at the scene of the trouble, the Pellet expert immediately gives the stalled engine the once over, and if only adjustments are needed he soon discovers the fact and has the truck under way quickly. If something has broken, a repair part is taken from the substitute set and replacement made. If the break is too serious, the complete ignition set is taken from the truck, the substitute set is applied, and the truck proceeds on its way, while the service car returns to Pellet shops, where permanent repairs are made to ignition set.

This method of operation cuts down the loss of truck time to a minimum, and during the month of February, with 113 ignition trouble calls responded to, the average time for restoring the trucks to operation was just 55 minutes.

It has been found in practice that about fifty per cent. of the calls result from broken ignition parts, while the remaining fifty per cent. result from



The Pellet Magneto Company's Establishment in Chicago

disarrangement of some part of the ignition mechanism, calling merely for adjustment when the expert arrives.

The Pellet company maintains a very large assortment of repair parts for all types of motor truck ignition apparatus, over 300 bins being used in its storage department. It is always able to make quick repairs or replacements for broken ignition parts from stock, so that where it has used a substitute ignition set on a truck it is soon released by replacing the original set.

The monthly inspection of each sub-

scriber's truck in its own garage has proved an excellent preventative of ignition trouble, and the aim is to instruct both the owner and the driver in ignition "diseases," so that trouble may be prevented in as large a measure as possible, a consummation economical alike to both owner and service company.

The success of the service the Pellet company is rendering in Chicago suggests that the plan may well be followed in other large cities, and work to the further efficiency of motor truck transportation in all large centers.

5. Arrangements were made with the Railroad Administration for sending empty automobile cars from all parts of the country into the manufacturing territory, resulting in an ample supply for factory shipments. An official has been placed in charge of this matter at Detroit to keep in close touch with the requirements of the factories in the Middle West and see that their car supply is provided for. As a result of this arrangement the shortage of automobile cars was quickly converted into a surplus and this condition has been maintained to date.

6. In the Consolidated Classification

6. In the Consolidated Classification case the Interstate Commerce Commission considered the carriers' proposal to adopt one freight classification for the three now in use, viz.: Official, Western and Southern. The Traffic Department took an active interest in this case, presenting 138 pages of testimony relating to motor trucks, automobiles and parts. Brief was submitted in December outlining argument as to how these items should be described and rated. The Commission's decision has not yet been rendered.

Highways Transport Committee Asks Aid of Congress

WASHINGTON, June 20 .- The cooperation of members of the United States Senate and House of Representatives to the end that the Highways Transport Committee be put in touch as far as possible with situations throughout the country in which adequate facilities for the transportation of farm and other products are lacking, is being sought through letters addressed to members of Congress. The letter calls attention to the fact that the growth of many communities has been retarded through lack of adequate transportation, and states that the Highways Transport Committee is endeavoring to make a survey in order to find out how to give relief to such communities. The letter suggests that each member of Congress addressed have a survey made of his own district so that the areas lacking adequate transportation be definitely located, and the motor truck utilized in increasing tonnage and assisting the railways and waterways in making complete delivery.

Work of the N. A. C. C. Traffic Committee During Past Year

At the annual meeting of the members of the National Automobile Chamber of Commerce, the Traffic Committee, consisting of Wm. E. Metzger, chairman (Columbia); A. I. Philip (Dodge) and F. C. Chandler (Chandler) made a report giving some of the details of the work of the Chamber's Traffic Department, of which J. S. Marvin is manager, for the year ended June 1. Among other things the report showed the following:

1. Carload shipments of automobiles from the factories in the year ending April 30, 1919, amounted to 189,429 carloads compared with 224,805 carloads in the previous year.

2. In the year ending April 30, 1919, the Traffic Department checked 74,209 freight bills for members to determine the correctness of freight rates charged; made 1789 claims against the railroads amounting to \$14,176.41 overcharge and \$5,542.20 loss and damage; received from railroads and remitted to members \$14,220.87 overcharge in freight and \$5,985.53 loss and damage.

3. The Traffic Department assisted other shipping interests in conducting the case before the Interstate Commerce

Commission to determine the printed conditions of the Uniform Bill of Lading. The Commission has just rendered a decision clearing up many points of contention and holding carriers very closely to common law liability. An important feature is the elimination from the Uniform Bill of Lading of the paragraph releasing carriers from liability when articles are shipped on open freight cars. Owing to its importance in connection with automobile shipments we strongly contended that this paragraph be stricken from the Bill of Lading.

4. We have held several conferences between representatives of the War Department, Master Car Builders' Association, Railroad Administration and automobile shippers to discuss rules and specifications proposed by the Master Car Builders' Association to govern the loading of motor vehicles into and on freight cars. After many corrections and extensive investigation, specifications have been drawn to indicate the form of blocking, bracing, doubling-decking, etc., the kind and size of materials. This is important because of the large costs involved and the conclusions reached are satisfactory to our members generally.

Doehler Die Casting Company Forms Employes' Association

At the suggestion of H. H. Doehler, president and general manager, the Doehler Die Casting Employees' Association has been formed. Each section of the industry has its own representatives. Through his representative the worker can reach the management and also has the right of appeal to a tribunal or committee of his own co-workers. The association is planning a protective life and sick insurance organization and many other welfare movements among the employees.

Some Pointers on Selling Trucks to Co-operative Farmers' Associations

Salesmen Must Go Out Into the Field to Develop This Territory. Must Study the Farmers' Needs

By C. P. SHATTUCK

OTOR truck dealers in the state of New York are afforded excellent opportunities to merchandise highway transportation to the members of the Dairymen's League, Inc., which has been organized by the farmers on a co-operative marketing basis. The league, which is acting as the sales agent for the producer, has experienced difficulty in securing satisfactory prices, due to the fact that at certain seasons of the year there is a surplus of milk which has had the effect of forcing down its price.

Form Co-operative Association

Through special legislation an organization has been perfected for co-operative marketing of agricultural, dairy and horticultural products and the laws have been amended to permit of collective bargaining by farmers, dairymen and fruit growers for the members of the association. The acts afford the farmers an opportunity to place their business on a sound, economic basis and allow them to act as a unit in making collective sales. Provision is made for the co-operative buying of farm equipment, etc. The plans provide for local associations, these acting under the parent organization.

To Eliminate Waste

One of the fundamental principles of the organization is to eliminate waste between the producer and the consumer. Inasmuch as transportation and distribution are factors in the cost to the consumer, and as all of these costs are ultimately passed along to the consumer, excellent opportunities are afforded to the live wire dealer to educate the members of the parent and local associations to the use of motor trucks for collecting, transporting and distributing the farm products.

Furthermore, the dealer will find that the ice has been broken, for in practically every county there is at least one truck being operated by the local associations or branches of the parent body. Inasmuch as these trucks are proving their economic value and are solving the delivery of milk, much of the hard work in interesting the farmer has already been accomplished. The farmers, knowing that trucks are being successfully used, and having concrete examples of their economy and practicability, should, therefore, be in a receptive mood when approached by a live wire dealer.

Selling the Farmer

The term live wire dealer is used because the average truck salesman in the

city will not find it easy to interest and sell the farmer or the associations above referred to, because the salesman is not familiar with the transportation and marketing problems of the farmer. But sales can be made, provided the dealer will study the conditions under which milk and other farm products are collected, transported and distributed by the farmer by the common carriers in conjunction with the horse drawn equipment.

It is not a difficult matter for a salesman to develop the territory. The State supplies data through its Farm Bureaus or County Agents and a visit to these will equip the salesman with data as to the territory to be exploited. The Farm Bureaus are only too glad to acquaint the salesman with producing sections and inform him how and when the products are marketed as well as supply names of the officers of the associations, producers, etc. Details of how the milk is collected, transported and distributed should be ascertained as well as the time required by the conventional methods.

Developing Leads

A trip in a car out to the territory is time well spent. It will put the salesman in direct contact with the heads of the associations and if tactful he will acquire much valuable information as to local farmers and conditions. If the dealer is diplomatic he should be able to obtain some good leads, not only for possible truck sales, but for passenger cars, if he happens to merchandise both.

Salesmen analyzing the agricultural districts should bear in mind that the average farmer is keenly interested in any proposition that will either lower his costs of marketing or obtain better prices. He resents the imputation that he is responsible for the high cost of living and is very sensitive on this point. Although he markets through the commission or middleman the farmer believes that the greater cost of farm products to the consumer is brought about by the middlemen. So the salesman will do well not to quote the use of trucks by the commission or middlemen as an example of the profits, etc., to be made by using trucks.

Favor Local Operators

Another angle to be considered by the dealer endeavoring to interest a co-operative association in the use of trucks is what may be termed the local element. The dealer may consider it easier to interest a city prospect in the farm transportation plan, but as a rule it will be found that the associations will much prefer one of their members to handle

their products. And it should be borne in mind that the usual method is to invite bids for the transportation, and whenever the city man competes with the local man the latter invariably wins out when the bid is awarded.

This contention is borne out by an investigation made by the writer in several cases where bids were made for hauling milk to the city. In one instance the city bid was a cent or so lower than that made by a member of the association. The latter preferred one of their own, for, as one farmer said: "We know Henry and what he is, and we don't know the city feller."

How One Dealer Operates

One dealer in the Hudson Valley has made sales to these co-operative associations by keeping in touch with the organizations. He attends meetings when permitted and whenever a new association is formed he gets busy. His plan of action is to ascertain from the heads who would make a good man to haul the milk and then he visits the prospects. Now this dealer has cost figures of two of his trucks working under similar conditions and with this data he can supply his prospects with figures that are mighty useful to the prospect when submitting his bid. And right here it is mentioned that the cost figures are compiled on actualities, not average costs of the truck to be employed.

It is said that the Dairymen's League is making great progress with its work of organization. Elsewhere in this issue will be found an article by the writer explaining how one branch of the league distributes its milk through the medium of the motor truck, how better prices are being obtained. There are excellent opportunities for the dealers to sell trucks to these associations and members, but it means hard work. As the dealer referred to said: "I am working days, nights and Sundays, but it is well worth it." This dealer is sold on the possibilities in the agricultural sections and is going to reap the harvest. Unfortunately too many of the city truck dealers believe that the farmer will come to them for trucks. If the truck dealer wishes to sell the dairy field he must not only go to the farmer but must obtain his confidence and, furthermore, after having sold him must provide 100 per cent. service, for through the medium of the farmers' wireless bad news travels

> "Transportation should touch every man's door. Build roads now"

LEGAL DEPARTMENT











Where You Stand When Somebody Quotes You a Price on Goods

The question asked herewith has probably been asked by thousands of other retailers, more or less often in their business experience:

Kindly give us your advice on the following question: We asked a certain wholesale house to quote us prices on certain goods which we carry in our line of business.

The house quoted us the prices, and on the strength of the quotation we put in an order. However, on receiving the goods we discovered that they had been invoiced at a higher price than the one quoted us.

The house insists that we should pay the prices charged. We insist that they are bound to the prices quoted. We remitted exchange according to prices quoted; the house insists on claiming the balance. We refuse to pay the balance.

Are we right in our contention?

The question therefore is: When somebody quotes you a price on goods and you accept it, is it a binding contract which you can enforce against the seller or if the market has advanced by the time the goods are shipped, can the seller charge you the higher price?

The answer depends on a number of considerations. Ordinarily it is a binding contract without doubt, but it may not be. For instance: A, a wholesale dealer in New York, receives a wire, or a letter from B, a retail dealer in Philadelphia, asking for a price on a certain quantity of merchandise. A answers in the same way, that is, if the communication was wired, he wires the price, and if received by letter, he answers by letter. There is nothing on record between A and B to show that all quotations are subject to change without notice, and there is nothing in A's wire to that effect or in the letter. It is a straightforward request for prices and an unqualified answer, giving the quotations desired. B, upon its receipt, at once accepts and forwards an order, by wire or by letter, it makes no difference.

That was a binding contract between A and B, and in such a situation, no matter what the market did by the date of shipment, A could never charge B a penny more than the price he had named him.

If the correspondent's case is like that, he has his answer.

But there are conditions which would change the rule. Nobody who quotes prices on merchandise is expected to keep the offer open forever. Sometimes he stipulates "subject to immediate ac-

ceptance," or "subject to acceptance be-If nothing like this is stipulated, the person to whom the quotation only is given has a reasonable time to accept it. What is a reasonable time depends on circumstances. If the market was advancing, a reasonable time would be shorter than if the market were not advancing. At the end of the time named for acceptance, or at the end of a reasonable time if no time was named for acceptance, an offer comes automatically to an end. If it hasn't been accepted by that time, it cannot be, and if the buyer sends in an order after that, and the seller ships the goods, they will go at the market price at date of shipment. Always provided that the order isn't accepted in such a way that the seller can fairly be charged with knowingly accepting it at the former price; that is, the price he had quoted.

The above is of course no exception to the rule that a **prompt** acceptance of a definite quotation creates a binding contract. But the quotation must be definite, the acceptance must be just as definite, and, moreover, must be prompt. If it fails at any of these points, there is no contract, and an order sent in can be filled at the market price, regardless of all previous quotations.

For instance, a firm wishing to buy some glass jars wired a manufacturer: "Please advise us the lowest price you can make us on order for ten carloads fruit jars. State terms and cash discount." The manufacturer replied: "We quote you fruit jars complete (stating prices) for immediate acceptance and shipment not later than May 15 (also stating terms)." The buyer at once accepted, but the seller later tried to get out of it. When the matter got into court, it was held that "there was a present offer by defendant (the manufacturer), the immediate acceptance of which closed the contract."

In another case a retailer wrote a mill about selling some bran, and the mill replied that it would sell for \$7 a ton. The inquirer wired that he would take fifty tons at the specified price. This also was held to be a good contract.

A seller of merchandise who quotes a price can't get out of it, after it is accepted, even if he carries on his letterhead something like "Prices subject to change without notice." That only has to do with standing prices, it does not concern a specified quotation, which stands just as long as it is stipulated it shall, either "for immediate acceptance," or "subject to acceptance before ——," or if no time is specified, then it stands for a reasonable time.—E. J. B.

Declaring Actual Value a Safe Plan in Shipping

The following letter, sent to me by the Pennsylvania Retail Merchants' Association, I answer here because it will interest every reader of this department:

We desire to submit this question. The facts are these: Two packages of goods, one of \$1800 and one of \$2100, were sent by express to a merchant. The one of \$2100 came all right, but the one of \$1800 was never received. The shipper had put on the packages "value not over \$50," as is often done to keep the express charges lower.

The contention of the express company is that it is not liable for \$1750, the difference between the declared and actual value, but is liable only for the \$50 declared value. The merchant refuses to pay the shipper owing to non-receipt of the goods, and the shipper claims of the express company, showing the actual shipment and invoice.

Who loses?

This was threshed out before our convention, and the opinion was that the express company was absolved by reason of the declared value of \$50, which was the shipper's fault. Also that the merchant could not be collected from by the shipper, because the goods never arrived, although the general understanding is that it is up to the consignee after the shipping receipt is in the consignor's hands. The point made was that by reason of the negligence of the shipper in putting such a small value on an \$1800 package, he was to blame.

If a common carrier (an express company is a common carrier) was not allowed to limit its liability for goods lost and injured while en route, it would be liable "for all loss and destruction of or injury to such goods, not occasioned by the act of God or the public enemy.' Unfortunately, it is allowed to limit its liability by contract, and this contract it forces shippers to accept by putting it in express receipts, bills of lading, etc., and also by officially publishing it in its rate schedules on file with the Interstate Commerce Commission and elsewhere. Since a shipper is bound to take notice of the rates, he is bound by what is filed, even if he doesn't see it and knows nothing about it.

It is well settled that express companies and other common carriers can and do legally reduce their liability by various devices. These devices can be avoided if the shipper will read what is in his express receipt or bill of lading and do everything he is required to do there in order to hold the company to full liability.

One way in which express companies are permitted by law to reduce their li-

ability is to include in their express receipt a clause that they shall not be liable for more than a certain amount, usually \$50, unless, where the value is more than that, the actual value is disclosed to the company at the time of shipment, and an increased rate paid. This clause has been held to be valid even where the loss or damage was caused by the company's negligence. It is most valuable protection for the company. Under it, it is the duty of the shipper to take the initiative and state the real value; the company can sit still and wait for him to do it, and if he doesn't do it, the most that the company can be held for is \$50, even if the real loss is \$50,000.

So that in the case cited, the company cannot be held for more than \$50 if the shipper failed to state the real value. As against the express company, the consignee is bound by what the shipper did, because "where a consignor contracts for transportation for the consignee, it is presumed in the absence of evidence to the contrary that he has authority to make special contracts for the consignee as to terms of shipment, and the consignee will be bound." Therefore, if the consignee instructed the consignor to ship the goods, or if it was understood between them that the consignor should attend to the shipment, the consignee must take his \$50 and cannot claim any more from the express com-

But whether he can recover his loss from the consignor is a different question, with, I think, a different answer. The consignor knew, or should have known, of the provision in the express receipt requiring that the real value be stated if it is to be collected from the company. He knew or should have known that if he failed to declare the real value, and the goods were lost, the consignee would be unable to collect his full loss. Knowing this, or being in position to know it, he created a situation which has cost the consignee \$1750. My judgment is that he can be compelled to pay that loss to the consignee, unless the latter was in some way a party to the low declaration of value in order to keep the rate down.

1.—If the consignee has paid for the goods, he should sue the consignor to recover his \$1750 loss.

2.—If the consignee has not paid for

the goods, he should wait until the consignor sues him, and then defend by introducing his claim for damages by way of set-off.

I have assumed throughout that these goods were not sold delivered, but in the usual way, viz., f.o.b. the seller's station. If they were sold delivered, then the loss is the shipper's, and the consignee needn't bother anything about it, because the shipper never got the goods to their destination.—E. J. B.

The Buyer That Was a Little Too Shrewd

Here is a case which will interest every retailer:

On October 26, 1918, we got an order for a carload of goods to be shipped from California, from a Philadelphia buyer. We made out a regular form of printed contract containing the usual arbitration clause. It provided for shipment before November 5. At that time you had to get a permit from the Railroad Board to bring things in, and this permit could only be gotten by the consignee, and then had to be put in the hands of the shipper before the goods could start to their destination.

After this contract was signed, the buyer applied for a permit and got it on November 4, which was the day before shipment was to be made. Instead of cancelling the contract because shipment could not be made in time, he turns it over to us to be sent to California, evidently intending shipment to be made. The permit got out there on November 8, and the car was loaded and started East on November 14

The goods were sold sight draft, bill of lading attached, and the draft came on here and was presented to the buyer on November 28. At the time the market had gone off about 75 cents a cwt., and he refused payment, stating as his reason that shipment had not been made before November 5, as provided by the contract. We were obliged to resell the car at a loss of about \$1000; have we any case against the buyer of these goods? It is of course true that shipment was not made before November 5. The buyer refuses to arbitrate—can he be compelled?

One can see the shrewd mind of this buyer working expertly when he made

this contract. "I will put in a date of shipment that they probably won't be able to comply with. If the market isn't off when the goods come in, of course I'll take them. If it is off, I'll reject on the ground that shipment wasn't made in time." It is an old trick, and variations upon it have been worked very many times. Often it is successful, but in this case I am clear that it will not be successful, for the buyer, when he handed over the permit at a time when he must have known it couldn't be sent to California and shipment made in the brief time remaining, waived his right to reject the goods on that ground.

Just a word about the arbitration clause in contracts of sale. It is a clause binding both parties, if dispute arises over quality or shipment, to settle it by arbitration instead of in court. The clause is worthless; either party can refuse to be bound by it provided he declares that intention before arbitrators are appointed. The arbitration clause is a good thing to have in selling contracts, but carrying it out depends wholly on the will of the parties, for they are no more bound by it after they sign it than before.

To go back to the question of waiver, let me explain that. A man who has a right upon which ordinarily he can stand, waives it, or loses it, if he lets the psychological moment pass without using it. In every business transaction there is a time to speak and to act in a certain way. If the time goes by without the word, or the act, it is loo late; the right is waived.

So with this buyer. When his permit came through on November 4, it was perfectly obvious that shipment could not be made before November 5, because that meant that the seller only had until the last minute of November 4. The buyer could then have cancelled the contract on the ground that it was impossible for the seller to comply with the clause as to time of shipment. Instead of that, he handed over the permit for transmission to California, at a time when he knew shipment could not be made before November 5. In my judgment that waived his right to insist on shipment before November 5, and the seller had a reasonable time after that in which to ship. I think you can recover all your loss from this buyer.-E. J. B.

School for Truck Drivers

A weekly school for motor truck drivers has been started by the Grant Truck Sales Co., of Cleveland, O., and instruction will be given to all truck drivers who care to attend, irrespective of the make of truck they drive. The sessions will be held Tuesday evenings, and the subjects to be taught the drivers will embrace everything in a mechanical way that the driver should know to get the very best service out of his machine at all times

At the first session, B. L. Williams, truck sales manager of the Grant Motor

Car Corporation, spoke on "The Driver's Relation to the Truck Owner"; I. J. Humphrey, service manager of the company spoke on "The Gas Engine and How It Functions"; Ray Skeels told of the way in which metals are heat treated to make them stand the terrific strain they undergo in motor truck operation, and Manager W. T. McLeran, of the sales company, outlined the plan of the school.

The company welcomes all truck drivers of Cleveland to the school and it should prove of great benefit to the operators in the Cleveland district.

Southern Truck & Car Corp., Greensboro, N. C., is going into production on its 1½-ton heavy duty truck. This truck has a Continental model N 3¾ x 5 in. engine, American Bosch magneto, Pierce governor and Fuller t-ansmission. It will sell at \$1895.

General Tool & Supply Co., Saginaw, Mich., announces that it has opened an office in the Saginaw district, representing the Cleveland Milling Machine Co. The General Tool & Supply Co. carries a stock of milling machines and a large supply of cutters.

TRUCK EQUIPMENT AND APPLIANCES





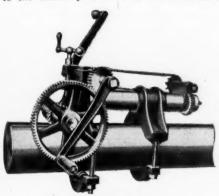




Portable Key Seaters

Portable key seaters are being manufactured by the Bucher-Smith Co., East Liverpool, Ohio, in several styles. These include style A for one man operation, style A-1 for two man operation, and style B for heavy duty work.

In style A the sliding head is cast integral with the spindle. A sliding clutch on the rear end makes provision for the disengagement of the feeding mechanism. The pulling strain is brought very close to the shaft by reason of the fact that



A Bucher-Smith Key-Seater This is the style "B" Portable Key-Seater which sells for \$75. It has an extra handle so that it can be operated by two men, if necessary

the feed screw is inside the spindle. This machine is equipped with five milling cutters, providing for cuts from ½ in. wide to ½ in. wide, in all standard widths. It is not necessary to reset in cutting keyways in shafts from ½ to 5 in. in diam. and 12 in. long.

As an extra, an 18-in. pulley properly fitted for motor or shaft drive can be obtained. Style A is sold for \$50.

Style B is similar to style A in general construction except for the addition of an extra handle so that it can be operated by two men, if necessary. Also, it is designed to meet the demands of heavy duty work, and is furnished regularly with 6 milling cutters so that it will cut keyways from ½ to 2 in. wide in shafting from 2 to 8 in. diam. and 12 in. long without resetting. Any size pulley may be obtained for this machine. A small set of milling cutters can be procured extra if desired to enable the machine to cut down to ¼ in. shafting.

Style A-1 is practically the same as style A with the addition of an extra handle, so that it can be operated by one or two men.

Build Now!

Money spent wisely for good roads will come back, because the roads will bring it back

New Clark Disc Steel Wheel for Pneumatic Motor Truck Tires

The rapid increase in the use of pneumatic tires for motor trucks has brought with it tremendous changes in the motor transportation field. Because these giant cord motor truck tires require an entirely different wheel for their use, the Clark Equipment Company, of Buchanan, Mich., manufacturer of disc steel wheels and axles for motor trucks, has, in cooperation with the large tire manufacturers designed a disc steel wheel having unique advantage for the use of pneumatic motor truck tires.

A slot extending from the outer edge of this disc steel wheel to the center of the rim admits the valve stem of the inner tube. The wheel is designed so that two strong web braces come beneath the slot, one on each side, reinforcing the rim and making it even stronger at the slot opening. They are made of cast electric steel.

When it is remembered that these tires weigh approximately 250 lb. apiece and that it takes a strong man to lift such a tire this slot feature will be appreciated. All that is necessary is to simply push the tire in place, making this operation a one man job.

The engineers of the Clark Equipment Company spent several weeks at the various plants of the large tire manufacturers, where, in conjunction with the tire



The New Clark Disc Steel Wheel for Pneumatic Truck Tires

companies they worked out in detail the requirements for a steel wheel suitable for trucks of all tonnages and every make of motor truck tire. As a result of their work these Clark disc steel wheels are being offered by truck builders as standard equipment and may now be secured in demountable rim or detachable type by truck users of any make or capacity.

New Williams Line of Turning Tools

J. H. Williams & Co., manufacturer of drop-forgings and drop-forged tools, with plants at Brooklyn and Buffalo, N. Y., has added a new line of Set Screw Pattern Turning Tools with right and left-hand offset and straight shanks, to its present line of "Agrippa" tool holders. These latter already include a full line in wide range of sizes for all regular machining operations. Several styles, among them turning-tools, are fitted with a cutter-fastening device in the shape of a cam instead of the conventional set



screw. The cams are furnished either of the hex head or headless type.

The noses of the holders, or shanks, of both cam and set screw turning-tools are beveled to permit their convenient use in close quarters. The tools are all dropforged from a strong, tough grade of carefully selected steel. The cutter-holding channel is carefully broached to accurate size in special machines and provides an absolutely rigid seat for the cutter—a fundamental requirement in tool-holder efficiency.

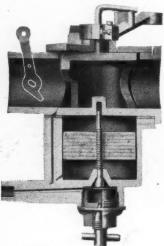
For those who purchase cutters made of a steel rolled to the variation in size common to usual mill practice, the maker recommends turning-tools of the camfastening pattern as giving the greatest economy, strength and efficiency. It is rapid and positive-the greater the pressure the tighter the lock. But the gradual rise of the cam, while providing great power, obviously limits its range of contact; consequently, where the size of steel used in cutters which are not ground to bearing size, as in turningtools, varies beyond established limits, the maker offers this new line of set screw pattern turning-tools at the same price as for corresponding sizes of the cam pattern holder.

The screws, made of a fine grade of alloy steel, are accurately machined and carefully heat-treated and hardened. They are unusually tough and strong.

"Agrippa" cutters, made from high speed, bar steel, are cut to the "diamond point" form or bevel. They thus provide for the most common requirements with a minimum of grinding for either right or left hand usage.

The Liberty Carburetor

The Liberty carburetor, which is designed exclusively for Ford cars, is made by the McCarthy Mfg. Co., 291 Dix Ave., Detroit, Mich. The main features are



The Liberty Carburetor

stated to be the positive and simultaneous control of gas and air, and the atomizing of the fuel to such a degree that it fires at low temperatures, due to the angle at which the air strikes the small jets. The Liberty needs no hot-air connection for winter driving. Eight tiny jets of approximately 1-100 of an inch diameter break up the gas into a fine vapor. This mixture is stated to be instantly explosive and to need no preheating.

The Liberty carburetor has no spring actuated valves and no needle valve adjustment. It is easy to attach. It draws all its fuel from the bottom of the bowl and requires no constant level of the fuel in the bowl.

The maker claims that, as a result of using a Liberty carburetor, one experiences a smooth running engine and an increase in mileage per gal. of gasoline.

Simplex Power Transmitter

In the June COMMERCIAL CAR JOURNAL, page 82, in the description of the Simplex Power Transmitter, it was inadvertently stated that it was manufactured by the Fremont Foundry & Feed Mill Co., of Oklahoma City, Okla. This is incorrect, as this concern handles this product in its territory only. The manufacturer of the Simplex Power Transmitter is Frank R. Weisgerber, 725 S. 9th St., Salina, Kan.

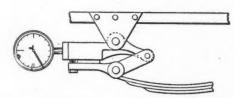
Cammen Carsafe Load Governor

The Cammen Car Safe Load Governor is intended to protect the truck owner against possible damage to his truck from overloading or running the truck when overloaded. This device is strongly built, requires no attention or adjustment, prevents the starting and running of a truck when overloaded, cannot easily be tampered with, is reasonable in price, and is constructed so that it can be mounted on a truck without changing the spring suspension or affecting the balancing of the truck.

The new load governor consists of two parts, the registering and the controlling device. The registering device is attached by replacing the usual spring shackles with castings especially designed for each type and size of truck. It consists of two castings hinged together. The upper is attached to the body of the chassis and the lower part to the carrying spring in the same manner as a spring shackle. The upper part carries an oil reservoir on which pressure is exerted by a plunger through a solidly welded-in bronze diaphragm. This pressure is transmitted through a Bourdon tube to the gage. Through this method a pressure registering gage up to 500 lb. is sufficient, thus eliminating costly gages. The ratio hydraulic reduction is reduced roughly to 8:1 for 1-ton trucks and 30:1 for 5-ton trucks.

The gage is equipped with an electrical circuit device so located that it is reached by the pointer on the gage when the load exceeds a safe limit. When the truck is overloaded the points on the gage reach a circuit pin which closes a circuit. The closing of this circuit energizes an electro-magnet which causes it to attract the armature. This in turn withdraws a catch and permits a spring to pull over a pivoted angle. The movement of this angle withdraws from its position a copper ball, thereby opening the ignition circuit and thus the engine cannot run. A bell may be attached in back of this pivoted angle so that when it is withdrawn it will strike the bell and in this way notify the driver that the truck is overloaded.

So that the driver cannot beat the governor the pull-rod by which the igni-



The Carsafe Load Governor Spring Shackle and Circuit-Closing Gage

tion circuit is opened is interlocking with the ignition switch until the truck is no longer overloaded. The control circuit may receive its current either from 4 to 6 dry cells or from the starting battery of the ignition circuit.

Heavy road jolts would register on the gage in the same manner as would

overloading and protection is given against this by means of a small governor driven by a flexible shaft from the front wheel, which is set so that as soon as the car begins to move it opens the circuit which would be otherwise closed by the jolts received from a rough road.

The entire controlling device is housed in a little box placed on the dashboard. The only change necessary is the ignition switch. One additional hole has to be drilled in the dashboard to permit the passing of the flexible shaft for the governor drive. The castings which replace the spring shackles do not require any additional drilling of holes as they are interchangeable and are made of medium carbon steel carefully annealed and designed.

The Cammen Laboratories, 42 W. 39th St., New York City, is the manufacturer, and is ready to supply load governor parts, and will be glad to assist any company in developing the best methods of installing the governor on its trucks.

A Device Which Combines a Reserve Tank, Tank Cap and a Gasoline Gage

A new accessory for the Ford car has been brought out by the Cox Brass Mfg. Co., of Albany, N. Y., known as the Reserve Gas Tank. This device is a com-



The Cox Brass Gas Tank Cap, Gage and Reserve.

bination of reserve gasoline tank, tank cap, and gasoline gage. It sells for \$1.

The tank is made entirely of a drawn brass shell without seams and is attached to a special cap which takes the place of the cap in the Ford tank. The reserve tank of this device will hold about one quart of gasoline, enough to run a Ford car 4 to 6 miles. The reserve gasoline is poured into the interior of this device and the plug is then screwed in. When it is necessary to use the gasoline in the reservoir, the device is unscrewed and the gasoline poured into the regular gasoline tank.

Speed Regulator for Ford **Engines**

The governor designed for use in connection with the Perfection Belt Power Attachment, where a steady speed is desirable, is being manufactured by the



The Perfection Governor

Ashland Products Co., of Ashland, O. This device cuts down the quantity of incoming gas as the speed increases and gives it more gas as work is thrown on. It is attached by removing the two cap screws as shown, the governor being slipped in place and the cap screws replaced. This device is driven by an extra fan belt, which is furnished with the outfit. The price is \$12, and the shipping weight 15 lb.

Matthews Light and Power Plant

These outfits consist of a Matthews truck motor, an electric generator, a storage battery and cooling system, all



The Matthews Light and Power Plant

assembled in one unit to furnish power and electric light. They are made in six sizes for home, farm, shop and small town or community use, and range from 300 watts to 15 kilowatts.

These outfits are made by Matthews Engineering Co., Sandusky, Ohio.

The "Flocontrol"

The Fulflo Pump Co., of Blanchester, Ohio, manufacturers of "Fulflo" water circulating pumps for automotive en-gines and "Fulflo" lubricating pumps for machine tools and grinding machines, are

marketing a new device, sold under the trade name of "Flocontrol" which enables the driver to regulate the flow of water through the engine and radiator and gives

him control of the engine temperature.

The "Flocontrol" is so arranged that the flow of water can never be completely cut off, and therefore a slight circulation is always maintained through the radiator, preventing the engine's heating too rapidly or freezing.

Another advantage of the "Flocontrol" is that, being located on the intake

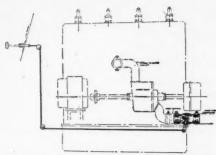


Diagram of the Installation of "Flocontrol"

side of the pump, it eliminates the use of bypasses and, when the flow of water is decreased, the pump consumes less instead of more power, as is usually the case with appliances located on any part of the circulating system.

Aerodyn Valve

The Aerodyn Valve, a new device for admitting heated air to the intake manifold, has recently been placed upon the market. This device draws the air from the carburetor hot air stove and sprays it into the mixture passing to the cylinders. It also provides for priming the engine with gasoline and is adaptable to any engine.

The body is cast brass and contains a steel ball and spring valve. The adjustments are locked by nuts. The outfit

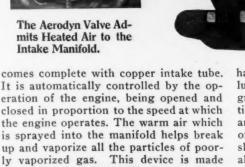
The Standard 3000 Series Universal Joint for Delivery Cars of Three-Quarter to One-Ton Capacity.



The Aerodyn Valve Admits Heated Air to the Intake Manifold.

by the Standard Auto Mfg. Co., 814 Gene-

see St., Syracuse, N. Y., and sells for \$4.50.



hardened and ground. These joints hold lubricant and keep the dirt out. Oil grooves provide bearings with lubrication, and a self-adjusting oil retainer is another lubrication feature. This type of joint is furnished in single joints, as shown in the accompanying illustration, also in a double-jointed assembly with solid or tubular shafts and hardened spline slip connection.

The Excelsior Breather and Oil-Filler Pipe

This is a new device for Ford cars, manufactured by Excelsior Auto Parts & Supply Co., Botsford, Conn., who claim it prevents oil spraying over motor, fan belt, wires and inside of hood, and makes oil



The Excelsior Breather and Oil-Filler Pipe

replenishing an easy matter. Price in black enamel finish is \$0.75. Breather is of gray iron and hook of ¼-in. cold rolled steel.

The Standard Universal Joint

The Universal Machine Co., of Bowling Green, O., is manufacturing the Standard Universal Joint in several models. The 3000 series is for use on threequarter and one-ton trucks. In the 4000 series joint, a larger size shell is made of 1/8-in. pressed steel and is doubled back upon itself to make a 1/4-in. flange where the bolts go through. This feature was patented by this concern, which states that it is a step toward lighter joints with the same carrying capacity. This joint is now equipped with all replaceable or renewable hardened or ground bushings and all wearing surfaces.

The shell or casing of the 3000 series is a heavy steel stamping, of one-piece construction, which will stand hard usage. It is impervious to dents, stones, etc. The yokes and rings are made of high carbon steel forgings, hardened and ground. The pin is of carbonized steel,



Arrow Grip Jack Has Wheels and Base, Making It Mobile

The accompanying illustration shows the Arrow Grip Screw Jack with the roller base feature. This jack is made by the Arrow Mfg. Co., Inc., Glens Falls, N. Y., and is stated to embody practical features. The rollers in the base make

Arrow Grip Jack Attention is called to the wheels and base of this screw jack, which are mounted upon springs, and as the jack is raised, the weight of the car pushes the base of the jack down. This feature enables the jack to be rolled under the car by means of the long handle.

it easily shifted beneath the axle and the springs can be lifted by means of a long folding handle, which is supplied with it. As the jack rises and begins to carry the weight of the truck, the rollers, which are mounted upon springs, disappear into the base of the jack. All of the weight of the truck is carried by the base of the jack itself, the rollers simply acting as the means of positioning the jack with ease. It is raised and lowered by means of two gears.

New Positive Drive Differential

The Elbertz positive drive differential, manufactured by the B. F. Everitt Co., Detroit, Mich., is claimed to have positive drive. It is figured that in driving in a circle, a greater amount of power is directed to the fast moving wheel, provided traction is equal. And moreover, the driving power is compensated to each wheel in accord with road conditions, and the required distance of travel.

This differential is composed of seven main members. These are: The right and left hand differential cases, No. 1 and No. 2 in the illustration; crank members,

No. 3 and No. 4; internal case gear, No. 5; intermediate gear, No. 6; shaft gear, No. 7, and three sets of bolts and nuts, No. 8, which retain the two crank members as one unit when assembled. The internal case gear, No. 5, is secured to the differential housing, No. 1 and No. 2, which meshes with the intermediate gear, No. 6. This can revolve about a bearing on the crank arm or eccentric member, No. 3 and No. 4. The latter engages with one axle shaft and turns with it. The other axle shaft engages with the shaft gear, No. 7, which engages the internal teeth of the intermediate gear member, No. 6.

Two-Blade Fan for Ford Cars

A new fan for Ford cars, designed in such a way as to concentrate the air currents, to impart a specified angle and direction to the air currents, and to prevent air from slipping off the tips of the blades, is being manufactured by the American Aero Co., Chicago. The retail price complete with hub and bushing is

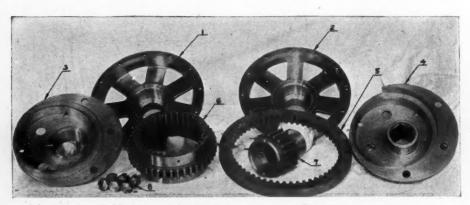
This fan may be adapted for cooling any type of engine. It is known as the Juelson Fan and has been designed especially for Ford cars. The pitch of the



The Juelson Two-Blade Fan

This fan is designed to prevent air from slipping off the tips of the blades and to cool the engine by concentration of the air

blade forms a parabolic curve from the cutting edge, toward the rear edge and the tip. The two are shaped from steel in one piece, also forming a cone-shaped center to protect bearings. The hub is made in halves, of pressed steel, bolted together so as to secure and locate the brass bushing, which receives a shoulder at the forward end and fits into a washer bolted to the hub at the rear end. The bushing is made of brass tubing. At the front end of the hub, two halves form a circular flange, to which the fan is attached by bolts in key-hole slots.



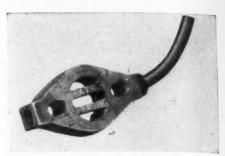
The Elbertz Positive-Drive Differential

This illustration shows the differential disassembled, It is claimed to be a perfect compensating positive-drive differential

The Colburn Economy Vaporizer

The Colburn economy vaporizer is designed to more thoroughly vaporize the gasoline before it enters the combustion chamber of the engine. It is manufac-tured by the Kant-Mis Spark Plug Co., of Green Bay, Wis.

It contains no moving parts and therefore no adjustments are necessary. The



The Colburn Vaporizer Exhaust gases are passed through it by means of the tubing shown, thus heating the mixture in the intake manifold

heat of the exhaust gases is used to heat the mixture. It is placed in the intake between the carburetor and the manifold and gives a hot, dry mixture quickly.

With this device it is said that the engine will run much more smoothly and that considerable saving in fuel results, Because of better combustion the possibility of gasoline leaking past the piston rings into the crankcase is eliminated.

The Colburn economy vaporizer is adapted to all trucks, tractors and all types of gasoline engines. It is sold through dealers for \$5.

A Torch for Auto Repairs

The Hauck Mfg. Co., of 101 11th St., Brooklyn, N. Y., is manufacturing a hand kerosene torch which enables repairs requiring heating to be made right on the

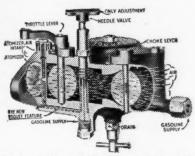


car itself. In case of straightening a bent axle, or brazing couplings, or repairing the car frame, where many parts would have to be removed otherwise, this torch provides quick means for heating the parts in preparation towards mending them. The heat is confined to the part desired with sheet iron or asbestos, and but a few minutes are required to heat an axle for straightening.

The burner itself is of a special composition heat resisting metal, made in one casting. All oil conduits are straight. To clean, it is necessary to remove but one plug. The tank is of heavy steel, all seams welded or brazed. The brass pump is powerful and is 1 in. in diameter. The burner valve has a ball check to prevent back flash into the tank. The torch is made in three sizes, the two largest ones being furnished with pressure gages. Prices are as follows: No. 14, ½-gal., \$16; No. 15, 1-gal., \$20, and No. 140, 1½-gal., \$98.

The Toquet Carburetor Has Atomizer Ahead of Throttle

The Toquet Mfg. Co., of Westport, Conn., is manufacturing a carburetor to replace the equipment of the Ford car. This instrument is different from the



Sectional View of the Toquet Carburetor
These carburetors are built as a complete replacement for the Ford car carburetors.

average carburetor. Ahead of the main throttle of the carburetor is a device known as the "atomizer." Fuel sprays through it vertically and there is a separate intake for this device, which is really a small carburetor in itself. It is in operation and the engine runs by the mixture from this atomizer, except when the throttle is open quite wide. Air is taken in through the top and gasoline through the bottom.

As the throttle is opened, the main jet comes into play. Fuel from it is drawn through the perforated tube, producing an atomizing effect. There is a choke lever supplied, as shown to the right, which cuts off the majority of the air and produces a very rich mixture for starting. The maker states the low speed fuel being carried ahead of the throttle of the carburetor and directly in the path of the intake manifold produces a rich mixture. Carburetor sells at \$15.



The Tipco Spark Plug
The Ignition Plug Company, 1411 W. Broadway,
Louisville, Ky., is manufacturing the Tipco spark plug.
The porcelain insulating material is of high quality, and the main insulator is protected from the outside air by a heavy porcelain cap. This keeps the parts of the internal insulator under engine temperature. This plug can be taken apart. The joint is metal to metal and the electrode is wound with fine copper wire to intensify the spark at the firing point. It sells at \$1.25.

Plexus Inner Tubes

The Plexus Tire & Rubber Co., Inc., State Road & Levick St., Tacony, Philadelphia, Pa., is manufacturing the Plexus "Tuf" brand of inner tubes in both red and gray. They are made from plantation Para rubbers, compounded to give great strength and resiliency. They consist of a series of laminations welded together. The valve patch is vulcanized into the tube as an integral part, during the manufacture of the tube. The ends are spliced unusually strong.

The Rohr Grease Cup Has a Quick Detachable Cover

The Tes-Tite Piston Ring Sales Co., 1777 Broadway, New York City, is manufacturing a new grease cup of very neat design. It is known as the Rohr Cup and is simple in operation. It is a great time saver. By a simple turn of the handle the cover comes off, the main body of the grease cup remaining in position in the bearing or device to which it attaches. Thus it is unnecessary to start the grease cup on any threads and there is no danger of threads stripping.

The cover is made to fit snugly and is held in the top of the cap by a flat spring. The cap has a thumb and finger handle or lever which is to be used when

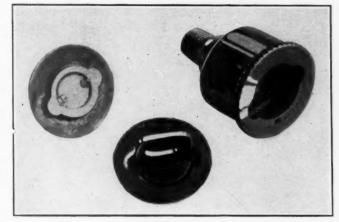
A Device to Disengage the Starting Crank

A device has been put on the market to protect the person cranking a truck from the back kick of the engine. It is known as the Atlasta Safety Auto Device, and is made by the Atlasta Specialty Mfg. Co., 2925 Locust St., St. Louis, Mo. This simple and ingenious attachment disengages the crank handle should the en-



The Atlasta Safety Auto Device
This device sells at \$2 and is designed to disengage the starting crank when the engine kicks back.

gine kick back. The accompanying illustration clearly shows the working of the device. It slips over the cogs as the



The Rohr Grease Cup and the Upper and Lower View of the Cover.

screwing the cap to force the grease into the bearing, or unscrewing the cap to refill. The cap of a Rohr Cup cannot be entirely unscrewed from the base, and so cannot be lost by vibration or from any other cause.

S. & P. Valve Grinding
Compound

A valve grinding compound of quality, which is claimed to give an exact and tight seat, is being manufactured by the S. & P. Mfg. Co., 163 Columbus Ave., New York City. It is branded the S. & P. Valve Grinding Compound. It is a fine abrasive compound, which is stated to produce a tight and perfect seat. It will not deteriorate or separate in any way and is always ready for use. This compound is put up in 5 oz. cans. The retail price is \$.40 per can. Only a very thin coat is necessary to grind in a valve evenly and correctly.

engine is being cranked. In case of backfire or back-kick, the mechanism will draw out the crank handle, disconnecting it from the engine. This device is easily attached by any one.

Hydraulic Gear-Shifting Device

The Laursen hydraulic gear shift, which was exhibited at the Chicago Automobile Show, is manufactured by the United States Auto Gear Shift Co., Eau Claire, Wis. This device permits the shifting of gears in advance; that is, when running in high gear, the lever can be shifted to second speed, but the shift is not made until the clutch is pushed out. Thus the clutch must be disengaged to shift gears.

Oil pressure is the means utilized to operate it, mechanical connection being between the foot pedal on the clutch and

an oil filled cylinder on the shift mechanism. The power cylinder communicates through a master valve with the cylinders on this same base, and by proper combinations of cylinder pressures and cross head mechanism, the various shifts are made.

Shifts can be made from any gear into another. The shift reversing is made



The Laursen Gear Shift

safe by the fact that it is necessary to open a spring button contact before it is possible to set the master valve in position for this change. The control lever of the master valve is located on the steering column and connections are made through linkage. The weight of the outfit complete is 18 lb. The shift is 10 3-16 in. wide, 12 in. long and the main part is 2 1-16 in. high. The main body is of aluminum and small parts are of drop forged tool steel and case hardened.

The pressure on the oil in the different cylinders is maintained only when the clutch pedal is being pushed to the extreme down position. Thus the strain on the mechanism and oil chambers is reduced to a minimum.

Hamilton Antimony Inner Tubes

A heavy red inner tube of high quality, made by a special formula and vulcanizing process, is being manufactured by the Hamilton Rubber Mfg. Co., of Trenton, N. J. It is said to be heat resisting and unbreakable at the splice or valve base. Durability and economy from a service standpoint are features. These tubes are of first class material and fully guaranteed by the maker.

Blackhawk Line of Wrenches Introduced

A new line of wrenches known as the Blackhawk, has been introduced by the American Grinder Mfg. Co., Milwaukee. It is a complete line and the wrenches

are of excellent quality. Many individual wrenches are included, as well as combination sets specially adapted to various makes of machines.

These wrenches are made of solid steel bar and sockets are machined, turned and broached out, making them exceptionally strong and accurate fitting. The Parker rust-proof process makes the Blackhawk attractive. The factory, devoted to the manufacture of these wrenches, is large and modern and has complete equipment. The entire output is sold through C. N. & F. W. Jonas, with offices at Chicago and in Pacific Coast cities.

A-C Brakes for Ford Cars

A demand for rear wheel brakes for Ford cars has led the A-C Mfg. Co., 2251 Grand Ave., Chicago, to add two new types to its line. These brakes consist of the No. 1, which connects the A-C outside brake shoe to the emergency brake only and, No. 2, which connects the A-C brake shoe to the original Ford foot brake pedal by cable running through an equalizer, making a positive brake on both rear wheels. The maker states that this eliminates the chatter and strain on the rear axle when stopping the car and is a great aid in preventing skidding.

The No. 3 brake is a combination of Nos. 1 and 2. It is connected with the emergency brake lever and takes the place of the emergency brake and also connects to the foot brake pedal by one continuous cable anchored at the top. The cable is attached at the top of the brake shoe lever-arm running from the emergency handle lever-arm to the brake

A-C External Rear Wheel Brake Outfit for Ford Cars

shoe and back to the foot pedal equalizer, then to the other brake shoe and back to the emergency brake lever arm on the other side of the car. Thus it works from either the hand lever, the foot pedal, or both, each braking action being free and independent. The prices are No. 1, \$13; No. 2, \$16, and No. 3, \$18.



The Flash-On Anti-Skid Chains

This illustration shows one of the quick detachable anti-skid chains manufactured by the National Chain Company, 30 East 42nd Street, New York City. On page 78 of the June COMMERCIAL CAR JOURNAL this chain was described. It was stated that they are attachable in 30 minutes and detachable in 15. The words minutes, in each case, should have read, seconds. Moreover, this type of Flash-On Anti-Skid Chain does not have a detachable cross chain. It consists of one length of chain with a hook on one end, and two other pieces of chain securely welded to the other end.

A Dustproof Priming Cup

A neat little priming cup, known as the Roberts Dust Proof, is being manufactured by The Roberts Brass Mfg. Co., Detroit, Mich. The body and plug of this cup are all brass and the handle and cap are one piece of stamped steel, the cap being bent at right angles by a second



operation. The steel part is rust-proofed, and the brass part finished in what is called the semi or machine-finish when furnished as standard equipment for tractors and trucks. When shut the top covers the priming cup and prevents any



dust or dirt from collecting and entering the engine when the priming cock is opened. Prices are from \$.15 to \$.25.

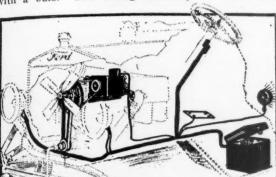
Electric Lighting System for Ford Cars

A neat little lighting outfit for Ford and other cars is being manufactured by the Titan Engineering Co., of Union City, Ind. The outfit complete consists of generator and cut-out, battery and battery box and for the Ford it also includes a tail light, two headlight bulbs and special attachments, generator bracket, complete wiring assembly with switch, pulleys, belts, bolts and everything necessary for installation.

The generator is two-pole, shunt wound, with ball bearings and a third brush for regulating the output. A simple but reliable cut-out relay is mounted on top of the generator, making a single unit of the two. The battery is sturdy and of ample capacity. It fits into a pressed steel box, held down by bolts

with springs to care for vibration. The tail lamp is neat and strong and provided with a bulb. The wiring assembly is

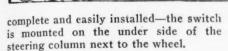
with the inserted steel rings, commonly used. The jaws are set into the body loose and held in position at the draw



Drawing of the Titan Electric Lighting System, Showing the Outfit Installed.

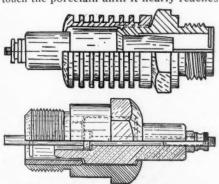
A Universal Socket Wrench

A new wrench known as the Billmont Master Wrench is being manufactured by the Edgar C. Guthard Co., 361 E. Ohio St., Chicago. It is a universal socket wrench, and will reach many inaccessible places, thus saving much time and expense in repair and overhaul work. This wrench can be held in place with



Modco Spark Plugs

The Modern Comb & Device Co., of Dayton, O., is manufacturing spark plugs in two styles. The porcelain in plug No. 1 is made in two parts, so that it will heat and cool more gradually. Another noticeable point of construction is that if the porcelain is broken it can be replaced by unscrewing the bottom part of the shell. No. 1 and No. 2 spark plugs have a counter-bore which does not allow the bottom part of the electrode to touch the porcelain until it nearly reaches



Above is the Modco No. 1 and Below the Modco No. 2

The bearings are in section and show the construction of the plug very plainly

the top of the top shell; then, if by any chance the porcelain should break 3/4 in. from the bottom, the porcelain will still be in good condition. These plugs are guaranteed and will be replaced at any time if defective. The price is \$1.25 each.

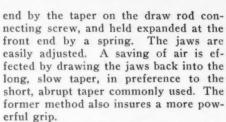
Logan Air-Operated Chucks

Revised and improved air-operated chucks and double acting air cylinders, are being made by the Logansport Machine Co., and placed on the market by the Frank G. Payson Co., 9 S. Clinton St., Chicago, Ill.

The air-operated compensating chuck as shown, is merely an improvement over the method formerly used upon turret lathes and screw machines. The chuck housing or body is hardened and ground steel, the taper seat for the jaw being a part of the housing, thus doing away

The Logan Air Operated Chuck

This compensating collet chuck is made regularly in two and three jaw types, with master collet jaws for false jaw-blocks for holding various forms.



The Logan air-operated compensating chucks may be obtained in two and three-jaw types, supplied with master jaws to which false jaw blocks for holding various forms can be fitted.

WIZARD

The Wizard Arc Spark Intensifier

The Wizard Arc Spark Plug Co., 501 Wainwright Bldg., St. Louis Mo., is offering a new spark intensifier, to be attached to any spark plug. It consists of a shell inclosing an air-tight chamber in which there is a spark-gap. The short arm of the device attaches to the head of the spark plug. This spark intensifier is claimed to deliver a hot and more forceful spark in the plug, thereby keeping the plugpoints clean and improving engine operation. The intensifier is easily attached and sells in a set of four for \$2.50 or a set of six for \$3.75.

Correction

In the description of the Kewanee power and lighting outfit on page 74 in the June issue of the Commercial Car Journal, the name of the manufacturer was inadvertently omitted. This outfit is made by the Kewanee Private Utilities Co., Kewanee, III.

one hand, the knurled handle preventing it from slipping, and operated with the other. This keeps the jaws squarely on the nut and allows the spinning off of the



New Billmont Master Wrench

This is a universal socket wrench which reaches many inaccessible nuts and facilitates their removal.

nut. The wrench and one adapter (so any size socket can be used), a Ford valve grinder, one screw driver and three nut sockets, retail, as a set, for \$10,

Midwest Engine Co., Indianapolis, Ind., announces the opening of four new offices: D. J. Carrison, with offices in the Florida Life Bldg., Jacksonville, Fla., represents the company in that territory. Chester B. Loomis represents the company in western Texas, Arizona, New Mexico and southern California, with offices at 303 Caples Bldg., El Paso; B. H. Downing is eastern sales manager, with offices at 111 Broadway; J. R. Lowe, with offices at 617 Maison Blanche Bldg., New Orleans, represents the company in the South.

Rubber Products Co., Barberton, O., announces that Stronghold fabric tires are now guaranteed 7500 miles on Ford sizes and 6000 miles on all other sizes.

Announcing the Atlas Rear Axle for Heavy-Duty Trucks

HE accompanying illustrations show a new rear axle for heavy duty as designed and manufactured by the American Machine Company, of Newark, Del. Although this axle was produced nearly two years ago, war conditions called for the use of the company's plant in the manufacture of munition machinery, and production for the market was therefore postponed until after the war.

The axle, of 3½ tons capacity, is shown as in service on the maker's Atterbury truck, the body of which has been removed for photographic purposes. The illustrations clearly show its clean, compact, substantial appearance; also, the extraordinary ground clearance afforded by the design. They state that it has given perfectly satisfactory results under the most severe conditions of use and abuse, and that it is quiet, free running and a remarkably good coaster.

The design of the Atlas axle is the result of a careful study of the performance of the various types of final drive



This Illustration Shows the Straight-Line Drive Possible With This Axle

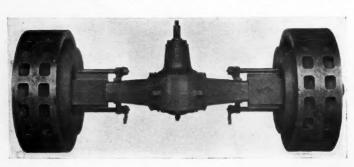
5. The location of the gear ring and pinion in the axis of wheel rotation, thus, in combination with the neutral position

of the pinion, relieving the wheel bearings of all twisting moments resulting from torque.

6. Dual internal expanding brakes on the wheels, completely inclosed, with full winding effect throughout the entire circumference of the drum, and a simple, positive adjustment for wear without alteration of linkage.

7. Light weight with moderate width of tread and overall dimension.

The manufacturers are now preparing for a quantity production of the Atlas axle in two-, three and one-half- and fiveton sizes.



Top View of the Atlas Axle, Showing General Lay-out

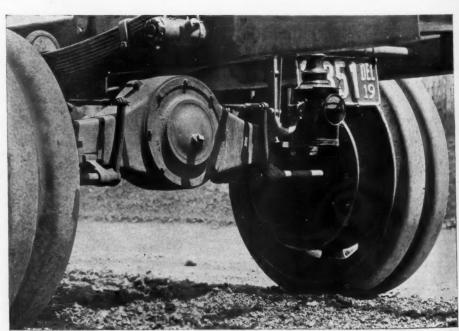
under the gruelling test of war zone operation, coupled with the conviction that, with certain improvements, the internal gear is a superior form of final transmission for trucks, especially with regard to mechanical efficiency and ability to withstand maltreatment and neglect. The improvements incorporated in the new design, as stated by the makers, are substantially as follows:

1. The inclosure of the gear ring, pinion and wheel bearings in an oil tight compartment, so that they operate in a bath of oil with the absolute exclusion of road dirt.

2. The location of the jackshafts and differential in a vertical plane above the wheel centers, in order that the propeller shaft may maintain a practically horizontal position, reducing wear of the universal joints to the minimum.

3. Greatest possible road clearance; 1634 in. with 36-in. wheels.

4. A one-piece box girder for the load carrying members in which the jack-shafts, differential and wheel spindles are housed, a combination resulting in extreme stiffness and light weight.



Rear View, Showing High Ground Clearance
The main housing does not contain oil for the differential. The latter is housed in a separate compartment

The Unitrux Truck Unit Enlarges Ford Truck Frame

THE Commercial Car Unit Co.,
16th and Glenwood Ave., Philadelphia, manufacturer of Truxtun Units for converting passenger car chassis into trucks, has added the Unitrux outfit to its lines. This new outfit is for converting a Ford 1-ton truck into a 1½-ton truck. The Ford axle is retained but a new propeller shaft is supplied together with heavy

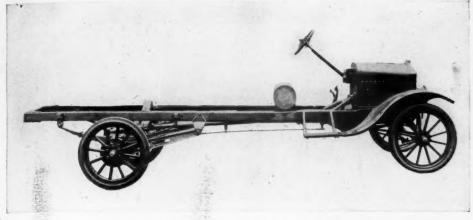
in the 52 x 3-in. Unitrux rear springs designed to carry the 1½-ton load and affording resiliency to protect the mechanism and load from road shocks. The Unitrux unit makes possible not only a heavier load capacity truck but is particularly adapted to users requiring big body space for light bulky loads.

The frame is made of heavy 4-in. pressed steel, in three lengths, and is 10

An important new feature is the use of a transmission end plate at the front end of the driving shaft, equipped with a permanently self-lubricating Bound Brook bearing. This bearing is practically wear proof and is specially designed for this work. Extra heavy 3-in. tubular driving shaft is used.

The new type Unitrux radius rods, used on all three models, are of much heavier construction and sturdier design than the Ford radius rods, and are also equipped with Bound Brook permanently lubricating bearings.

The Unitrux unit is adapted to use with any of the three standard bodies for Truxton units, namely, 92 in., 112 in. and 130 in., although even much larger bodies can be built with an overhang.



Side View of the Model 20 Unitrux Truck Attachment

This truck unit gives a longer and stronger frame; tubular driving shaft; strong radius rods with selflubricating bushings, and long, heavy rear springs, semi-elliptic, mounted on each side of the chassis

springs, strong radius rods and a longer and wider frame, and the whole outfit shows that careful attention has been given economy of upkeep and refinement of details.

The Unitrux is made in three models: Model 10, which fits the regular Ford truck chassis, wheelbase of 124 in. but increases the frame length back of the driver's seat by 50 in.; Model 20, increasing the wheelbase to 136 in. and the frame length, back of the driver's seat, to 106 in., an increase of 62 in.; Model 30, wheelbase 148 in., frame length, back of the driver's seat, 118 in., an increase of 74 in.

The Unitrux frame extension is straight throughout save where at the front end, it bends in to join the Ford frame to which it is securely bolted, between the step hangers; also by connecting plates on line with Ford rear cross members and by plates about midway between these two connections.

The Unitrux radius rods are connected by brackets to the frame in front of the spring hangers and extend to the rear brake spider, transmitting the drive and torque to the frame. It is of special design, built exceptionally strong for heavy strains. The transmission end plate at the front end of the shaft is equipped with a self lubricating Bound Brook bearing. There is also a universal joint at each end of the driving shaft.

The lateral rear spring suspension is a departure from the single Ford transverse rear springs. There are nine leaves in. wider than the Ford frame, to which it is securely attached at three points, namely, at the step hangers; at the rear cross member of the Ford chassis, and midway between these points. In all three models the new type driving shaft, the rear lateral springs and new type radius rods are used.

Guaranty - Pliable - Drive and Extended Frame for Ford Worm-Drive Trucks

The Guaranty Motors Co., of Cambridge, Mass., has announced the Guaranty-Pliable-Drive and Extended Frame for Ford 1-ton trucks. The Guaranty Co. states this strengthens the life of the Ford truck and retains the low upkeep of the Ford car, and, at the same time, increases its efficiency and enables it to carry loads up to two tons.

The outfit consists of a double ball bearing universal joint; propeller shaft, including front and rear universal joints; rear housing connection flange, with integral bearing; front drive flange; a fluted connection shaft to worm; rear drive flange; 4-in. channel frame; 12-leaf side springs, together with all necessary attachments and grease cups, and an axle truss rod support. Choice is given of wheelbases of 120, 132 or 144 in., and 35 x 5-in. demountable rear wheels with AWT Goodyear cord tires are furnished at an added cost of \$135, or demountable wheels, 34 x 41/2-in. Goodyear AWT fabric tires at \$98 extra.

Interesting mechanical details are as follows:

Spring seats are placed close to the wheel center at the strongest part of the housing for load carrying, to prevent housing buckling and breaking. A lug is cast on spring seat for attaching the truss rod, providing a support underneath the entire Ford axle.



The Guaranty Outfit Attached to the Ford One - Ton Truck

This illustration shows the appearance of the Ford I ton truck when the Guaranty-Pliable-Drive and Extended Frame is attached to it. It is capable of carrying a load of two tons, and can be had equipped with Goodyear cord tires of extra cord.

Pliable Drive or the Truck Frame With Springs Sold Separately

The Guaranty-Pliable-Drive, without the increased frame length, side springs, etc., is particularly valuable to Ford truck owners who have an expensive body attached, of sufficient capacity but giving poor service.

The Guaranty-Ford-Truck-Frame, with 12-leaf side springs, etc., is another Guar-

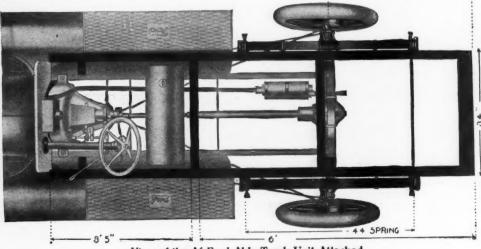
anty product of great value to Ford truck owners. This is attached to the regular Ford wheelbase and renders wonderful service. It will readily be seen that the heavy frame and side springs will eliminate practically all of the truck user's troubles where he does not need an extended wheelbase but does need to carry a maximum load.

Af-Ford-Able Attachment, Changing Ford Car to a One-Ton Truck

An attachment designed to convert a Ford car into a truck with a capacity of 1 ton is being manufactured by the Af-

simplifies the setting up of the attachment and makes positive the proper fitting of the wheels.

3'6"



View of the Af-Ford-Able Truck Unit Attached

The truck unit shown herewith attached to the Ford chassis is featured by the fact that it is easily attached. It sells at \$185 f. o. b. Omaha

fordable Motor Truck Corp., 2061 Farnam St., Omaha, Neb. This attachment strengthens the Ford car with a long frame, two heavy springs and a rear axle brace. The frame is bolted to the top of the Ford frame, it being unnecessary to drill holes. The bearings of the extension are large and strong and remove the strain from the Ford bearings and axle shaft. Its construction gives the Ford a floating axle.

The feature of the attachment is the rear axle brace which carries the load and protects the rear axle housing.

The frame is 9 ft. 5 in. long, of 3 x 2-in. material and extends from the dash 31/2 ft. beyond the regular Ford frame. The bearings used in this attachment are placed inside the Affordable heavy hub and rotate outside the rear axle housing of the Ford. They take all the strain and weight. The springs are 44 x 21/4 in. of good quality of steel. Two heavy wheels with demountable rims and heavy brake drums are furnished. The weight of the outfit complete is 333 lb. and boxed for shipment, it weighs 370 lb. An important feature of this outfit is that the regular Ford hubs are now installed in the wheels, ready to slip on complete, which

A Trailer for Use as a Traveling Store

The accompanying illustration shows a trailer and a close-up view of the coupling apparatus for it, manufactured by the Liberty Camp Car Co., 760 First National Bank Bldg., Chi-This trailer is designed for cross country touring, or for the traveling Eusiness man to display his wares. It has steel running-gears, wood wheels, ball bearings in the hub and 3-in. solid rubber tires. There are 10 glass windows and two windows in the outside doors: electric lights form part of the equipment and there is a folding table, chairs, a coal and wood stove, kitchen cabinet, sink with running water, ice-box and fireless cooker. a washstand, toilet, media washstand, toller, medicine cabinet and mirror as well. The body of the car is 20 ft. long, 8 ft. wide and 7 ft. high. The out-fit complete weighs from 1700 to 1800 b. and sells at \$3000 f. o. b. Chicago. A smaller size weighs 1400 lb and sells at \$2500 lb. and sells at \$2500.

The Zig-Zag Honeycomb Radiator

The Auto Radiator Mfg. Co., of 1712 S. Michigan Ave., Chicago, is manufacturing the Zig-Zag Honeycomb Radiator for cars, trucks, tractors, etc. The zigzag flow of the water through the radiator, from top to bottom of tank, gives greater cooling capacity. The tubes, after being formed, are assembled in the core by the convex part, or offset of tube fitting into the concave or grooved part, and are then dipped in solder on both sides. The flexibility of these tubes per-



The Zig-Zag Honeycomb Radiator

mits expansion should the radiator freeze. These radiators are made of brass, and are tested under twenty pounds of air pressure before leaving the factory.



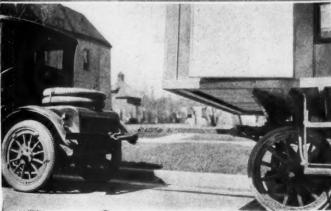
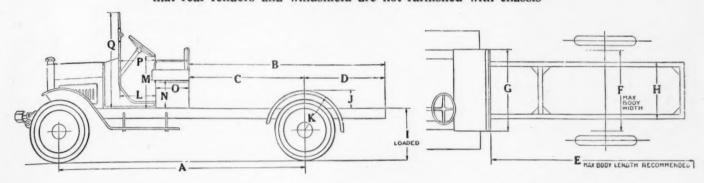


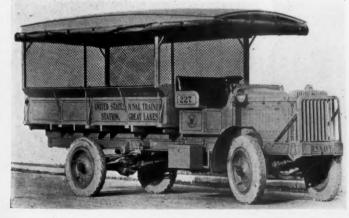
Table of Body-Building Dimensions

(Continued from our June Issue)

Note: Where figures are omitted under columns J, K and Q, it denotes that rear fenders and windshield are not furnished with chassis



Model Name or No.	Cap. in Tons	A	В	С	D	E	F	G	н	1	J	к	L	M	N	o	P	Q	Max. Body Weight Recom'd
-			n Motor				Mich.												
R ·	1	142	112	69%	421/4	120	66	48	34	32	10	24	261/2	30%	14	18	24 1/2	54	900
H	2 2 1/	$\frac{150}{172}$	130 137	78 921/4	52 4436	132 156	66 78	48 48	35	30 321/2	12	24 24	261/2	303/4	14	18 18	24 %	54 54	$\frac{1200}{1600}$
M M	31/2	187	1671/2	1071/2	60	168	84	48	35 .	39	91/2	26	26½ 26½	30%	14	18	26	54	1800
M	U		rolet Mo					40	00 .	99	•	20	20 72	30 74	1.4	10	20	01	1000
T-1920		125	1071/4	611/4	46	,	46%	361/2	351/4		8 3/4			301/9	15	161/2		53 %	
T-1919		125	10734	611/4	46		47	361/2	351/8		71/4			29 7/8	15	161/2		53 4	
			Brothe			ch.					-								
Business Car	3/2	114	47%	39%	8	72	47	47	38					$26\frac{\%}{4}$			17%	5013	600
15	4	138	lant Tr	67%	poratio	117	cago He	aights,	32	28	11 %	22,5	223/4		16%	17	25%	291/2	500
15 16	2	144	1161/6	72	44 1/9	126	44	40	33	31	× 40	1.00	2534		16%	17	25 %	29 1/2	1500
17	31/4	176	183	105	78	192	46	46	36	34			281/2	301/2	17%	17	271/2	45%	2000
16	2	168	1401/2	96	441/6	150	44	40	33	31			25 %		16%	17	25.75	291/2	1500
	_	Higra	de Moto	rs Com		Harbor	Spring	s, Mich	1.										
A-18	1	115	85	46	39	100	48	44	32	32	8	23	36	23	7	18	27	50	1000
** ** * **			Kelly-Spr			Truck	Co., S												4050
K-31 & 32	11/2	144	141	85 16	551/2		6	351/4	34	321/2	10		201/2	20	151/2	22	22	61 1/4	1050 1350
K-35 K-36	21/2	144	141	85 18	551/2	* * * * *	7	351/4	34	331/2	10		201/2	20 20	15½ 15½	22 22	22 22	611/4	1350
K-36 K-40	2½ 3½	150	141 145	85 18 81	55 1/2 64	* * * * *	0	35 1/4 40	34 38	33 1/2 39 1/4	9		221/2	33	171/2	23	26	621/2	1600
K-45	4 72	150	145	81	64		8	40	38	391/2	8		221/2	33	1716	23	26	621/2	1700
K-50	5	150	145	81	64		8	40	38	39	8		221/2	33	171/2	23	26	621/2	1800
K-60	6	150	145	81	64		8	40	38	39	8		221/2	33	171/2	23	26	621/2	1900
			icky Wa		g. Co.,		ville, Ky	1.							-				
1 Ton	1	135	1081/2	621/2	42	120	48	48	36	34	6		23	29	15%	16	221/2	54%	760
			vell Moto				., Oakla			0.0	4.0	40	OF 2/	00	10	101/	00	51	
	1	124	a Motor	561/2	45	114	60	481/2	36	30	10	19	25%	29	13	181/2	28	51	
Model F	11/2	108	60	30	30	60	46	43	34	99	6	21	26	231/2	91/2	151/2	261/2	52	
Hawl			Co., Slou		lowa.	00	40	30	0.8		v	21	20	20 /2	0 /2	10 /2	20 /2	0.0	
K	11/2	1481/2	112	72%	391/4	126	381/4	4416	34	30	8	241/2	251/2	29%	151/4	191/2	241/2	551/2	750
M	2	1481/2	112	7234	391/2	126	381/2	44 1/2	34	31	9	251/2	251/2	29 3/4	151/2	191/2	24 1/2	551/2	1000
ML	2	160	130	83%	461/4	132	381/2	44 1/2	34	31	9	251/2	251/2	29 %	151/2	191/2	24 1/2	551/2	1000
Kleib	er &	Co., In		rancisc		100	20	40	0.4	00			0.4	20	45	90	0.4		1200
AA A	11/	130	120 132	71 88	49	126	52 50	49	34	33 35			24	30 31	15 16	20 20	24 24		1200
BB	11/2	143 153	144	97	44	144 156	50	49	34 34	35			24 24	31	16	20	24		150
B	214	160	150	98	52	162	51	49	34	35			24	31	16	20	24	58	150
C	31/2	163	156	1081/4	4736	168	54	49	38	35			24	31	16	20	30		200
D	5	180	168	110	58	180	54	49	38	38			24	31	16	20	30	591/2	250





Special Bod'es Built for the United States Navy by the Winther Motor Truck Company

This company, which is located at Kenosha, Wis., has sold quite a number of special jobs to the Government, of which the above are examples

"Easydump" Body in One to Three Ton Capacities

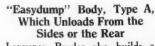
Lawrence Bruder, 211 West Second St., Cincinnati, O., is manufacturing a new style of dumping body, which is unique and can be unloaded from either side, at any angle, as well as from the rear. This feature is made possible by the use of a turntable mounted on roller bearings-perfectly balanced and securely fastened to the chassis. The entire unit is easily turned to the right or left as desired. This body is especially recommended for unloading in close quarters, for road grading, etc.

The hoist is of special design, and is hand operated and so constructed that the heaviest loads can be dumped with very little effort in a short time. The hoist is made of steel throughout. The bodies are made of wood or steel, or wood with steel bottom. For general purposes, wood body with steel bottom is recommended. The wood bodies, in addition to having five standards on the outside, are reinforced with steel strapbolts on the inside, eliminating any possibility of getting out of shape. steel bodies are equipped with two angle iron braces on each side. Forged steel parts and seasoned oak are used throughout.

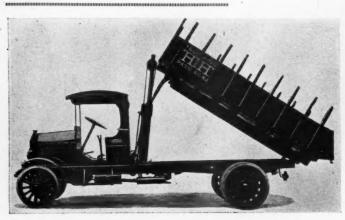


Special Bus Body, by Brownell & Burt

This illustration shows a special bus body job built by Brownell & Burt, Taunton, Mass. This company suggests the following rule for obtaining the length of the body for the chassis: Obtain the distance from the back edge of the steering wheel to the rear axle, subtract 22 in. for driving space and the upholstered seat back, add one-half of what you have left to the whole, and you have the loading space. For example, if you have 48 in. after deducting the seat space of 22 in., add 24 in., making 72 in. load space.



Lawrence Bruder also builds a Type B, which is similar to Type A, excepting that it unloads from the rear only.



Sanford Model 35-W, 31/2 Ton Chassis, Fitted With Dumping Body

This shows a special body job, built by the Sanford Motor Truck Company, Syracuse, N. Y. The body is of wood, steel-lined, and is designed for contractors' use. The chassis is equipped with a Wood hydraulic hoist, and the body can be used as either a dumping body or a stake body.





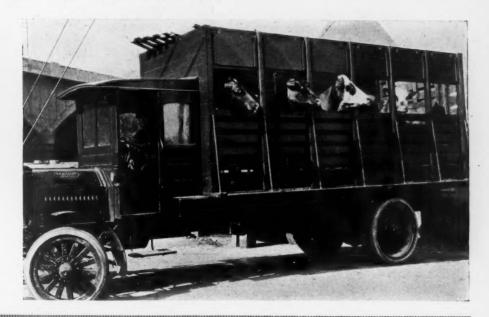


The Moore High-Lift Coal Dealers' Body in Highest Position

E. A. Moore, Reading, Pa., builds a line of dumping bodies in all capacities, fitted with either hand or power hoist. At the right is shown the high-lift body in its highest position. In this position, the distance from ground to floor of body in front is eleven feet, and from ground to floor of body in the rear is seven feet. The body can also be raised at the front only, similar to any regular dump body. The two-ton capacity body measures 102 in. long, 54 in. wide, inside measurements. The rear gate is hinged and is fitted with a double lock and arm to hold the gate open when hauling other material. All gearing is enclosed. The body is lined throughout with steel. The Victor type, contractors' body, is equipped with either hand or power-hoist, and is built in any capacity. The body illustrated is a three-ton job, and measures ten feet long and four feet wide. The tail-gate is equipped with detachable hinges, with double latch to allow spreading material and an arm to hold gate open when necessary.

Special Body Designed for Hauling Cattle

The body is by Kraus & Denker, 224 W. McMicken Avenue, Cincinnati, Ohio, and it is mounted on a Schacht chassis, built by the G. A. Schacht Motor Truck Company, of Cincinnati.



A Special Body for Hauling Fish Oil and By-Products of the Fish Industry

Monterey, California, is the mecca of the fish industry on the coast and one of the latest companies is the Monterey Fish Products Company, organized for the purpose of extracting the by-products, sold in the form of fish oil and fertilizer. The fertilizer is easily taken care of in bags and the fish oil has formerly been barrelled for shipment to San Francisco by railroad. Congestion has made it almost impossible at times to carry the product by railroad. When the fish was to be taken, the perishable nature made this shipment a losing proposition. Accordingly, the Monterey Fish Products Company purchased Federal trucks with special water-tight steel bodies for this work. These trucks take fish or fish oil to San Francisco, a haul of 150 miles, as well as to other points.

Hesse Model 51, Open Express Body

Built by the William G. Hesse & Son Manufacturing Company, Leavenworth, Kansas. It is 106 inches long, 45½ inches wide and 12 inches deep, with flare-boards and full chain endgate. Body is extra heavily ironed and braced. Painted dark green. Equipment includes Model No. 60 box-seat with lazy back on driver's side; full width cushion of imitation leather. Complete floor boards furnished with seat.



Hesse Model No. 53, Stake Body

Loading space 60 inches wide, 102 inches long, stakes 36 inches high; five heavy cross sills and two heavy subsills running lengthwise. Painted dark green. A model No. 61 cab top and Model No. 23 built-in windshield, ventilating type, are furnished as part of the equipment.

Big Cigarette Factory Finds Motor Trucks Haul Sixty Per Cent Cheaper Than Mules Formerly Cost



Just a Package of Fatimas, but it Takes Tons of Tobacco Delivered on a Motor Truck to Make All That Are Used Daily





It Takes a Big Motor Truck to Haul the Paper for the Inside of This Box to the Cigarette Factory

Down in Richmond the Liggett and Myers Tobacco Company Uses Five Big Motor Trucks to Keep Raw Material Coming and Finished Product Going. Have Very Efficient Service

By A. V. COMINGS

CIGARETTE is a small piece of baggage, taken individually, but when a factory turns out ten to fourteen million "fags" a day, wraps them, and boxes them, and when everything that goes into them has to be hauled to factory, and finished product is hauled to the freight stations, well, it takes considerable hauling.

Down in Richmond, Virginia, the Allen & Ginter branch of the Liggett & Myers Tobacco Company turns out the famous Fatima, Piedmont and Richmond Straight Cut brands of cigarettes, and motor trucks do all the hauling that is necessary to the immense production at this plant. Formerly all the hauling was hired, and was done by mule power.

Today, with modern trucks owned by the company and efficiently managed by W. W. Wyatt, who has charge of this branch of the work, the hauling costs of the tobacco company have dropped 60 per cent. over mule days, and raw material coming into the plant and the finished product going out are handled more expeditiously and more satisfactorily all around.

Mr. Wyatt claims that his company is getting the best haulage service in the city of Richmond, and it is not hard to believe that this is true when one watches his trucks at work. The company now operates two 2-ton Pierce Arrow trucks, one 3-ton Republic, one 3-ton White and one 5-ton Pierce Arrow.

Every truck is laid off a half day each week in the company's own garage, and during that time is given a thorough going over by the company's expert, who tightens up any loose connections, makes every small repair and adjustment that is necessary, and makes certain that the truck goes on to the jeb again in the yery best of shape.

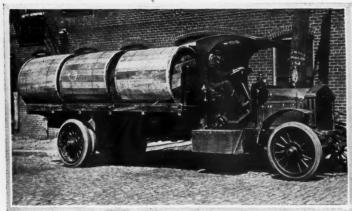
Each truck is washed twice a week, and each engine is washed out and new oil is put in each 500 miles.

Mr. Wyatt believes in the economy of keeping trucks in the very best of condition, and his trucks certainly have the appearance of being that all the time.

Over 40,000 pounds of tobacco and other materials are hauled to and from the plant every working day of the year, most of this, of course, being raw tobacco. For instance, the five-ton Pierce Arrow repeatedly hauls 11,000 pounds of raw Turkish tobacco from the bonded warehouses, whence it has come direct from Turkey, to the cigarette factory, this being no overload, as the truck has a lighter body than allowance is made for by the manufacturers.

And for the domestic tobacco cigarettes, six hogsheads at a time is the usual load from warehouse to factory, each weighing 500 lb.

An item which frequently has to be hauled, is $4\frac{1}{2}$ tons of paper, in rolls such as newspaper offices use, this paper be-



A Pierce-Arrow Truck Loaded With Hogsheads of Virginia Tobacco



Three-Ton Republic Truck Used by the Liggett and Myers
Tobacco Company

ing used merely for the inside slide of the box in which cigarettes are sold.

Mr. Wyatt uses colored drivers, as most southern trucking concerns do and pays them \$18 per week. He pays no attention to recommendation for ability, but takes the new driver out personally and gauges his work, training him to his ideas of what a good truck driver should be. He says it pays in the long run.

Not only in the manufacturing end, but among tobacco raisers in the south, motor trucks are fast coming into general use, and when the Virginia crop is marketed in Richmond in January and February, each year sees more motor trucks bringing in the raw tobacco to the Richmond warehouses.

Claims Against the Adams Express Company

NEW YORK, June 14.—The National Automobile Chamber of Commerce announces that it has discussed with Chas. W. Stockton, general counsel, Adams Express Co., the offer to settle claims on the basis of 60 per cent., and can make the following statement which has his approval.

1. The Adams Express Company is able to pay its full legal liability on all claims against it and is willing to do so when its investigation is completed establishing the company's liability. It does not urge shippers to accept 60 cents on the dollar, but the offer is open to those who prefer to get their money at once on that basis without awaiting the completion of investigation.

2. To accept this offer claimants must write direct to Charles W. Stockton, General Counsel, Adams Express Co., 51 Broadway, New York, who now has full charge of the Adams Express Co. claims (shipments prior to July 1, 1918). Give full reference, such as your claim number, Adams Co. number, date of shipment, description of shipment, consignee, destination, whether loss, damage, C. O. D., etc.

3. If claimant does not desire to accept the 60 per cent. basis of settlement, he must be careful to protect himself against the limit of two years and one day from date of delivery of shipment, or, if shipment was lost, then within two years and one day after a reasonable time for delivery has elapsed. The company claims it cannot pay money for a loss or damage for which it is not legally liable, and that it is not legally liable after the time has elapsed within which suits may be brought. Mr. Stockton agrees that where claims are closely approaching the two year and one day limit he will have such claims, if called to his personal attention, looked up at once; he has a special department organized for that purpose and will undertake to give an answer within thirty days, but requests that in all cases where answers are not received through any mishap, the claimant, in order to avoid waiving his rights, bring suit within the time limit.



A Warning to the Driver

The Atterbury Motor Car Company, Buffalo, N. Y., believes in putting safety first signs right where they will be seen as long as their trucks last. So they have cast the sign "Safety First" in the very fabric of the truck, and put it at the base of the gear-shift and brake-levers, right where the driver cannot fail to see it every time he gets aboard his truck. It is a constant reminder that the driver cannot help heeding.

4. Where the 60 per cent. basis is accepted the date on which claimant agrees to this becomes the date of settlement, and the limitation of two years and one day cannot afterward be invoked.

5. The limitation of two years and one day does not apply to C. O. D. returns where the shipment was delivered to the consignee. Where the company has failed to make returns in such cases it will pay full amount of C. O. D.

The Greenly Co., 1130 Race St., Philadelphia, Pa., wholesale distributor of automobile equipment and supplies to the jobbing trade, announces that it is now open to consider distributing propositions in the accessories line.

United Motors Service Holds Convention

DETROIT, June 17.—The annual convention of the United Motors Service, Inc., of Detroit, was held June 10 to 13, and was attended by branch representatives and other executives from all parts of the country. The visitors as well as the main office officials were given a whirlwind time from the moment President R. S. Lane opened the convention until its close with a big banquet at the Detroit Athletic Club. Various policies were discussed and it was also announced that the United Motors Service, Inc., was preparing to assume the responsibility of giving "rim service," taking over the rim service work of the Bearings Service Company.

"Trading with the Far East," a companion volume to "Trading with Latin America," is a new title in the Foreign Trade series, issued by the Irving National Bank, New York. It marshals facts and information for the man who is too busy to gather them first-hand, and outlines effective ways of meeting the problems arising in connection with the routine of trade activity in the Orient. In acquainting the manufacturer or exporter with outstanding factors in trade beyond the Pacific, it provides an interpretation for commercial purposes of conditions in what promises to be one of our most exceptional markets for years to come.

India Tire & Rubber Co., Akron, Ohio, manufacturer of cord and fabric tires, has declared a dividend for the first quarter of its fiscal year at the rate of 8 per cent. annually on its common stock. A 7 per cent. dividend, payable July 1, has been set aside for the preferred stock.



Motor Truck Used on Big Southern Stock Farm

This two-ton Atterbury truck is the property of A. B. Ruddock, owner of the Curles Neck Farm, fifteen miles southeast of Richmond, Va. It makes two round trips a day to Richmond for supplies and to carry in farm products. For six months this truck has done more and better work than the horses who formerly did all the hauling between the city and the farm. The Curles Neck Farm is one of the most noted stock farms in that part of Virginia and requires a large amount of hauling. The owner is thoroughly satisfied that a motor truck is the logical transportation unit for the up-to-date farmer.

Intercity Motor Transportation is Profitable if Conducted on Sound Business Principles

Cannot be Run on Guesswork. Price-Cutting a Detriment to the Entire Business.

Dependable Service the Keynote

By C. P. SHATTUCK

RALY in the fall of 1917, manufacturers and merchants in the vicinity of South Norwalk, Conn., received a business card, the reverse side of which contained the following information:

"We pick up at your door and deliver to consignee's door. Your goods are handled but once, thus saving delays and damage. We GIVE and OBTAIN a RECEIPT for all goods handled. Let us handle your freight, and stop worrying about embargoes."

In this manner B. Hershfield, of South Norwalk, announced that he was ready to supply motor transportation between that city and New York. Because of the transportation conditions existing at the time the business men were attracted. That was 18 months ago. Today eight machines, operating at 90 per cent. efficient both ways, travel daily between Norwalk and New York. B. Hershfield is making money and has survived his competitors and the price cutters, because he supplies a dependable service at a rate that is less than the common carriers and that permits his making a reasonable profit on his investment.

A Combination Service

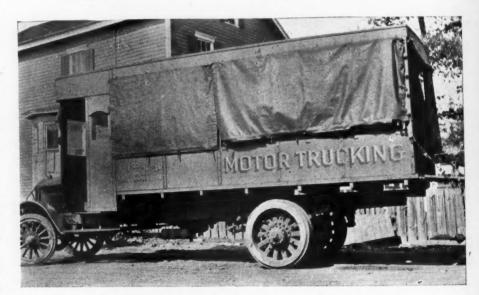
Mr. Hershfield supplies a much higher grade of service than the common carriers are giving and at less cost to the shipper. His service, a store door delivery, eliminates many handlings, to say nothing of greatly reducing the time factor. He personally conducts the Norwalk end of the business, while a man of 14 years' experience with the Adams Express Company operates the New York end. These factors, coupled with the fact that

the drivers of the trucks are Norwalk boys and not contaminated by the influences of the big cities, are largely responsible for the success of the service.

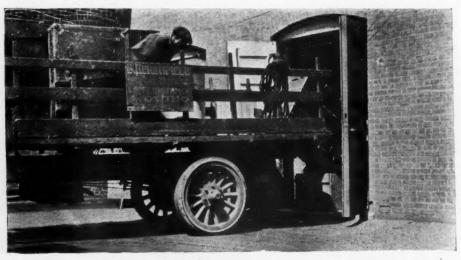
Trucks Loaded at Night

The Hershfield trucks make daily trips to and from New York. The larger capacity machines leave Norwalk at five in the morning, indicating that the drivers are working with the company, not for it. The trucks are loaded and all is made in readiness for the New York trip the previous night. The drivers assist in

this work. The goods are collected by 2-ton trucks, the material being dumped on a loading platform at the store house, where it is sorted and loaded on the big trucks according to the delivery. These 2-ton trucks visit the factories and stores and invariably bring back a capacity load. Orders are telephoned for collection and there are scheduled pick-ups. In every instance the pick-up truck driver checks up the goods and gives the shipper a receipt which is turned in at the office. The large trucks reach New York, down town, about nine o'clock in



Showing the Type of Body Used on the Maccar Truck



Showing How Poor Loading Methods Handicap Motor Highway Transportation

the morning and deliver, also pick up. The New York headquarters also acts as a receiving station for small packages, as it is the policy of the company to discourage shopping about the city for small work. Large loads are picked up as well as delivered. On the return trip the trucks deliver to intermediate points such as New Rochelle, Rye, Port Chester, Harrison, Greenwich, Stamford, etc., picking up any material destined for Norwalk or intermediate points. A feature of the service is the avoiding, as much as possible, of deliveries on the out trip from Norwalk because of the delays incurred. Small packages in and around Norwalk are delivered by the pick-up trucks.

Save Many Handlings

The bulk of the merchandise hauled to New York is manufactured goods, the greater part of which was formerly shipped by express. The motor service not only saves considerable time but many handlings, as is indicated by a shipment by express from Norwalk to New York City. The common carrier method is for the express company to send a wagon for the packages, haul them to the railroad where they are weighed, placed on the loading platform, loaded on a baggage truck, and then finally unloaded in the express car. On arrival at the Grand Central station, New York, the packages are loaded on industrial trucks, hauled to the platform at Lexington Ave. and 49th St. where they are sorted for delivery to the distributing stations. From these stations the goods are once more loaded on vehicles and delivered. Only a small percentage of the goods is delivered direct from the Grand Central station. The delays incurred through these numerous handlings are too well known for further comment.

The store door delivery, at less cost to the shipper or consignee, and, the elimination of the delays of the common carriers have converted many companies to motor highway transportation. Among the many instances that could be cited is a large dairy company in New York supplying Norwalk and intermediate The trucks deliver the milk, cream and ice cream within a few hours after it has been accepted and pick up the empty cans, returning these the next day to New York. Under the old conditions the milk, etc., would be from eight to 20 hours reaching its destination and the return of the empties would also be delayed. There is less loss to the retailer, and the consumer is served with a fresher product. The service has greatly increased the output of the dairy company in the places served by the motor truck express.

Hauling Food Products

Another case is that of a large wholesale grocery company in New York City supplying the towns and cities served by the motor express. It is not infrequent that a truck will deliver five tons of food products. This store door delivery plan eliminates the haul to the railroad and the tedious delays incurred at the piers in New York City. Among the interesting shipments noted by the writer when accompanying the pick-up trucks in Norwalk was that from a formerly German owned manufacturing concern. This plant was sold by the Government to Amerian owners, who, after the change, emloyed the motor trucks. The Germans, respite their claims for economy, efficiency, etc., used a boat service. It is interesting to record that under American management the business of the company has doubled and the concern is sold on the idea of motor highway transportation. The writer was informed that the steamboat company had solicited for business but was told "there was nothing doing." This indicates that the truck service is satisfactory.

In several instances the pick-up trucks brought in valuable loads. In every case receipts were given and receipts obtain-

ed from the consignee at the delivery end. All packages are covered by insurance. In cases where a factory makes shipments to points between Norwalk and New York a checker accompanies the pick-up truck and the delivery truck. Mr. Hershfield adopted this precaution to avoid the possibility of loss in certain shipments. Receipts are given the shipper for goods thus delivered, a service appreciated by him.

Water Service Loses Out

The Hershfield trucks transport large quantities of oysters from South Norwalk to New York, to the Fulton market are consumed. The Hershfield express has a large summer clientele; that is, it hauls supplies, furniture, etc., from New York and other cities to the summer places on the Sound. This is a regular and profitable trade, and the fact that bookings have been made by those served last year indicates satisfactory service. Long distance hauling is another feature.

The fleet of trucks comprises two 3½-ton Macks, these being used between Norwalk and New York; two 2½-ton Maccars, a 5½-ton Maccar, and two 2-ton Barkers. A 5-ton Hahn is to be placed in service very soon. The Bark-



The Pick-up Truck Unloading at Warehouse Platform, Where the Goods Are Sorted and Loaded on the Big Trucks

and for shipment abroad. Shipments are made during the months of R's and it is not uncommon for the trucks to carry 300 barrels daily. Formerly the oyster company had a local express call for the barrels and cart them to the dock. The boat reached New York the next morning but the oysters were delayed in delivery owing to the congestion at the piers, etc. And as the boat sailed but two or three times weekly, delays at the plant frequently resulted in missing the boat. With the trucks, the oysters are taken at night and delivered early the next morning at the market. This enables the wholesalers to make early deliveries, and all parties concerned turn their money quickly.

Among the interests served is one of the largest florists in the East. This company has hot houses near South Norwalk and it sends much of its product to New York by truck. Some of the more perishable flowers are still shipped by express as they will not withstand the shaking of the solid tired trucks. Eventually the use of pneumatics will solve the problem.

Profitable Summer Trade

In addition to hauling food products, fruits, etc., from New York, the motor express has transported large quantities of potatoes from Westport farms to New York. There is not the opportunity to put in operation the principles of the Rural Express, for what little farm products are raised in and around Norwalk

ers are employed for pick-up work and the majority of the other cars are used for the New York service. Very often all except the Barkers will be employed on the longer hauls.

Problem of Price Cutters

Mr. Hershfield has had competition, and has some now. While he does not object to honest competition he would welcome some method by which the price cutter could be eliminated. He believes that the price cutter eliminates himself in time, that it is a process of evolution, but, as Mr. Hershfield expressed it, it works an injury to highway motor transportation, for the shipper new to it and attracted by the low prices of the price wrecker frequently learns to his sorrow that the cut price operator cannot make losses good. Consequently a dependable trucking company has to overcome this prejudice. Mr. Hershfield is standing pat as to his prices. His policy is to meet such competition with the statement that his service is dependable, that any loss is promptly adjusted, and that he is ready to demonstrate his service. A sidelight on the motor truck service afforded by the Hershfield line is the small amount of business being transacted between Norwalk and vicinity and New York and the intermediate points by the railway express.

Motor Trucks Can be Economically Operated on Short Hauls

Here's a Case Where Less Than Fifteen-Mile Hauls Are Proving Very Profitable. Efficient Loading Facilities Are Necessary

By C. S. PERRIE

T has been argued that the motor truck is not economical on short hauls, and that it cannot compete with the common carriers or with horse drawn equipment where the radius of deliveries is less than 15 miles. The experience of the Everett & Treadwell Company, wholesale grocers and grain dealers, of Kingston, N. Y., whose transportation experience dates over half a century, is an exception to this rule.

The company is the oldest in Kingston. It began business in 1869, at which time it used canal barges, which operated between Kingston, Buffalo and New York City. For 46 years the company used horse drawn equipment and the railroads. The Everett & Treadwell Company has had, therefore, a very comprehensive experience with horses for delivery work as well as for obtaining its supplies from the boat and railroad terminals.

Large Volume of Business

The company transacts a gross business of about \$1,000,000 annually, of which the greater part is grain and feed. Ulster and the other counties served by the company are large farming sections. Some idea of the volume of the business may be obtained by the fact that one of the warehouses has a capacity of 40,000 bushels of grain. The normal stock of groceries carried is valued at \$200,000.

The company supplies with groceries and grain not only the local dealers, but the jobbers and dealers for miles around. Previous to their introduction of the motor truck, six 2-horse teams were employed by the company to deliver its goods. The radius of delivery was from 8 to 10 miles. The railroad was used for hauls exceeding 10 miles and, in many instances, for shorter distances, depending upon territory and volume of goods.

Handicaps of Freight Service

The use of freight had its handicaps. It required loading the wagons at the warehouses, hauling the grain to the freight depot, unloading it and packing it in the cars. At the other end the consignee was obliged to load at the station and very frequently make a haul of several miles, for the territory is not well served by the railroads. This method not only necessitated several handlings, but shipments were delayed in transit. was particularly true during times of freight congestion. In all instances the consignee paid the freight charges and had the additional cost of either hauling the grain from the freight station or having the work done.

In 1916 the Everett & Treadwell Company took its first plunge in motor trucks. The word plunge is used ad-

visedly, for the older and more conservative members of the firm were not sold on motor highway transportation. They deemed the horses reliable and sufficient, and it must be said that the company's



Grain and Feed Are Loaded by Means of a Chute to the Truck

horses are fine specimens. The more progressive members of the company succeeded in convincing the older ones to try a truck, and a 3-ton King was placed in service.

From the start, according to figures maintained, the truck proved cheaper than the horses, with the result that in 1918 a 2-ton Reo was added; also a 1-ton

Ford truck. The company experimented with built-over passenger cars and discarded them in favor of the truck, as cost figures showed that the converted passenger car cost more to maintain than a truck with several times greater carrying capacity.

Before the King truck had been in service over six months, and before the routing and loading had been changed to meet its requirements, it did the work of two 2-horse teams. The radius of deliveries was doubled and in many instances further increased. The trade, formerly supplied by means of the railroad, was quick to appreciate the advantages of the truck service when the store door delivery was introduced. The motor transport saved the consignee from sending to the railroad, eliminating a haul and saving horses. If a dealer required a rush order it was promptly filled

Saves Hauling Charges

by the truck.

The Everett & Treadwell Company makes a charge similar to the freight cost, but the store door delivery saves the dealer the hauling cost. The use of the trucks is proving a business getter for the company. There is in Kingston another grain dealer who does not use motor trucks, but uses horses on short hauls and the railroads for the long hauls. It is hinted by those familiar with the grain and grocery business that the superior service afforded by Everett & Treadwell is a factor that is gaining the company new trade in the country districts. In the agricultural districts any saving in costs is appreciated.

Each day the truck makes a run to the Saugerties, 15 miles from Kingston, and



A Sample Load of Grain Being Delivered to an Out-of-Town Dealer
. This truck, a King, has been in service since 1916

another to Rhinebeck, 10 miles distant, a total of 50 miles, and delivers 14,000 lb. of groceries and grain. There are many stops on these trips. A monthly record also shows the work of the King truck. In August last it traveled 690 miles and delivered 682,130 lb. It consumed \$27.80 worth of fuel and oil and the driver and helper were paid \$121.50. The truck averaged about 13 tons daily in deliveries.



A Little Action in Unloading Grain at a Dealer's Store in an Agricultural District

It has had but one set of new tires, and the cost of these, fuel, oil and repairs for the year 1918, when it was three years old, was \$591.

Reo Making Good Showing

The Reo truck, placed in service in 1918, is affording equally as good service. It is employed on long hauls and frequently carries three tons. The company does not favor overloading, but as the roads are good and the drivers careful the repair bills have not shown any

bad results from the practice. The showing made by the trucks is good when it is considered that they return empty, although occasionally they do stop at the boat terminal on a return trip.

Horses are still utilized for the short hauls around the city, which has nearly 90 miles of streets, although having a population of only about 27,000. The horses are cheaper than trucks for this work, as many stops are made supplying the grocery stores, etc. Trucks are used for hauling supplies from the boat, two miles distant, and the Ford employed in short haul work and for emergency.

All grain is brought directly to the warehouses by rail. The trucks and wagons are loaded by a chute. Groceries and other food products are on a separate platform. An additional loading platform at the grocery warehouse is being considered which, if adopted, will greatly speed up loading and cut down the time now lost by the trucks, which sometimes are obliged to wait until the horse drawn teams are loaded.

A Combination Apparatus for Treating Roads

The accompanying apparatus is recommended by the Pierce-Arrow Co. as a combination machine for use by cities and towns for flushing or sprinkling with water, or for applying asphaltic oil. Three tank capacities are offered, 1000, 1200 and 1500 gal., the 1200 gal. outfit being the one most suitable under average conditions.

The pump used to supply water or oil (as the case may be) to the distributing pipes or nozzles is of centrifugal type, capable of discharging 350 gal. of water per minute against a pressure of 35 lb., the pump operating at a speed of 1000 r.p.m. The above apparatus is designed for use with light oils only, or bituminous material that will flow readily at 70 deg. Fahrenheit and which will not have over 60 deg. of asphalt content, or with a

material of consistency equal to that, known to the trade as Tarvia "B." When heavier oils are used or when it is necessary to oil the roads at lower temperature, the tank is heated.

For this purpose the tank is fitted with about 300 ft. of steam coil inside the tank, with valves extending out at the rear. When extra heavy materials are used requiring a temperature at application of 350 to 400 deg. Fahrenheit, this equipment is fitted with a steam boiler carrying 250 lb. pressure and heated with a fuel oil burner. This attachment is placed on the chassis at the rear of the tank.

Traffic Establishes Drive-Away System

Traffic Motor Truck Corporation, of St. Louis, Mo., has established the driveaway system which was adopted during the war period by various manufacturers, because of lack of adequate shipping facilities. Dozens of cars are being driven away each week by dealers in the vicinity of St. Louis. In response to numerous inquiries sent out by the Traffic Truck Corporation, through general sales manager H. H. Hawke, the indications are that the desire for trucks by farmers and merchandisers is so strong that they are more than pleased to cooperate with the manufacturer by coming to St. Louis and driving back their trucks.

It's the business of each Chamber of Commerce and each local Board of Trade, to boost good roads. On the other hand, you'd be surprised to see what trouble these organizations have in getting proper co-operation. Lazy citizens, who still suffer along with hoss haulage don't miss the good roads. What's a ditch more or less to them if they have a whip? Just being a user of trucks or a salesman of them is not enough. Drive up occasionally to the Board of Trade or the Chamber of Commerce, climb out and join them at the conference table. Having auto trucks without good roads is like having a spinning machine without flax. One is sort of dependent upon the other. There's this much to be said of the entire truck movement, however-trucks have made folks think more of good roads. Every truck is a public spirited citizen, in a sense. And the funny part of it is, folks sure do like fine highways once the other fellow puts them in.

The Export Register, published by the Export Manufacturers of U. S., Inc., 149 Broadway, New York, contains a list of 1826 export houses, cross-indexed to show the goods they buy and the countries they reach. It also contains 827 full page reports on the leading houses, showing among other data the year established, rating, buying departments, names of buyers, countries shipped to, goods bought, and goods specialized in. The price is \$15.



Pierce-Arrow Chassis Fitted With a Hvass Equipment for Street Flushing, Sprinkling or Applying Bituminous Material

Systematizing of the Motor Transport Service



How the Interstate Motor Transport Company Sold Motor Truck Transportation to the Merchants of Chicago

By A. W. BLOSS

HE story of the rapid and substantial growth of the Interstate Motor Transport Company of Chicago should prove a source of encouragement and inspiration to everyone interested in the successful operation of motor transportation companies, while the presentation of this company's plan of operation will prove of practical benefit to those endeavoring to place the business on a sound basis.

The company was organized July 1, 1918, by G. C. Anders, the present general manager, who started with a single second-hand truck to haul steel to and from Hammond and Gary, Indiana and Chicago. No general plan of development was in mind at this time, the idea being simply to assist in relieving the congestion at a time when the Government was exerting every effort to speed up production at the plants located at these points.

During this early stage over 90 per cent. of the loads consisted of government material and the demand continued so urgent that Mr. Anders added one truck after another until six were in operation at the time the armistice was signed.

The signing of the armistice, however, caused no diminution in the business, for outside contracts were secured in ever increasing volume and it soon became apparent that there was a large legitimate demand for motor transport service during normal times.

As a consequence the present company was incorporated in November, 1918, with a capital stock issue of \$100,000, but this was very quickly increased to \$600,000 to keep pace with

the broadened scope made necessary by the growing demand.

It was about this time that H. J. Hansen, the present traffic manager, became identified with the concern. Mr. Hansen came with an experience of 20 years as a railroad man, supplemented by valuable training as a government employee in the inland traffic service of the ordnance department.

His connection here with motor transportation impressed him with the possibilities of the business from a commercial standpoint and he came to the company with well formed plans and ideas which he carried into effect.

After ascertaining that it was feasible to cover the district around Chicago for a radius of 40 miles, the first move was to divide this district into six zones and within these limitations eight routes, reaching upwards of 100 villages and towns, were laid out.

These routes were decided upon and laid out (1) on the basis of the most passable roads reaching outlying towns that would be apt to avail themselves of the service offered and (2) from which a sufficient amount of business could reasonably be anticipated to make the route financially profitable.

The zones, on the other hand, were arbitrarily laid out on the same lines as the government parcel post zoning system. The first zone includes all territory within a radius of 15 miles of the terminal and each successive zone embraces an additional 5 miles, as shown in Fig. 1.

Classifications

In working out a classification schedule that would conform to the limitations of motor truck and trailer equip-

ment, it was found necessary to take into consideration the following three important points: (1) The cubical contents of the package. In this connection the precedent established by the steamship companies was followed. In the case of bulky packages of light weight the classification was raised to a sufficient extent to permit a reasonable return on a maximum load; (2) The hazard involved. The classification on fragile articles or articles of value, where damage would result in excessive claims, was raised sufficiently to indirectly provide an insurance fund to pay any losses that might be sustained; (3) Excessive weights or lengths. In such cases the classification was raised to permit an extra helper or two or for slow driving as required. For instance, a piano is an example of an article involving both the financial hazard and the excessive weight which demands a high classification. It is therefore listed as double first class which provides for the engaging or sending of a helper. This company's literature includes a classification list (not. illustrated) which includes practically every item that is apt to be offered for transportation and which the company is particularly desirous of handling.

Working Out the Rates

In working out the rates to and from the Chicago Terminal to outlying points it was decided to maintain a uniform rate for all points within the same zone. In arriving at these figures the rates for parcel post, express, railroad, interurban and boat shipments were compiled and carefully compared. The resultant rate for motor transport service was then computed so as to compete favorably with these rates while at the same time bearing in mind that a sufficient return had to be realized from each trip to compensate for the door to door method of

A minimum rate for Zone 1 and a maximum rate for Zone 6, in each class, was then established, based upon the unit cost of operation referred to later. The rates for intermediate zones were then computed from these basic figures on a pro rata basis. The complete schedule of rates for points between the Chicago terminal and each zone is shown in Fig. 2.

A more elaborate schedule was then worked out to cover intercity shipments and in this work many other problems had to be taken into consideration, such as road conditions and other matters sur-

RATES Between Chicago Terminal Polk and Clinton Sts., Chicago	Rates Include Store Door Delivery (as mentioned in RULE 3) In Cents per 100 lbs. CLASSES												
Points shown in	1	2	3 -	4									
ZONE 1.	30	25	21.5	17.5									
ZONE 2	32	27.5	23	19.5									
ZONE 3	34	30	25	21									
ZONE 4	36	32	26.5	22.5									
ZONE 5	38	33.5	28	24									
ZONE 6	40	35	30	26									

Fig. 2. Schedule of Rates for Points Between Chicago and the Six Zones



Fig. 1. Showing Zones and Routes Adopted by the Inter-State Motor Transport Com-

rounding the movement between the points in question.

The "Rate Basis" table, part of which is shown in Fig. 3, is the result of a thorough investigation of every condition entering into the movement of freight between the points indicated. After ascertaining the rate basis between the points desired, the charge upon the article to be transported is found by referring to Fig. 4. This table was worked out in the same manner as the one shown in Fig. 2.

A practical example will more clearly illlustrate the manner in which the system works out. Supposing a shipment of steel is to be transported from Hammond to Chicago Heights. Reference to the classification table (not illustrated) shows that this is listed as Class 4. The table in Fig. 3 gives a "rate basis" of 2

and upon referring to Fig. 4 it will be found that the rate on Class 4, rate basis 2, is 17.5 cents per hundred pounds or \$3.50 per ton.

On the other hand, supposing that the same shipment is to be transported from Half Day to Waukegan, a distance exactly the same as that between Hammond and Chicago Heights cited above. It will be found that the rate basis in this case is 7 and the freight rate on Class 4, rate basis 7, is 26 cents per hundred pounds or \$5.20 per ton-a difference of \$1.70 per ton on what appears to be an identical situation.

The answer to this seeming discrepancy is that the roads between Hammond and Chicago Heights permit a direct haul, while between Half Day and Waukegan the roads are impassable for heavy trucks, making it necessary to haul the load to the terminal by way of Route 8 and then send it out to Half Day by way of Route 7. It will be seen by this how carefully and scientifically the whole system has been worked out.

Equipment

The Interstate Motor Transport Company at the present time operates seventeen trucks with as many trailers-the largest equipment handling intercity hauling in the western district. They have found the ideal equipment to be a 71/2-ton truck with a 71/2-ton trailer-a

		Rates Include Pick	up and Deliv	ery								
RATE BASIS No.	In Cents per 100 lbs. CLASSES											
	1	2	3	4								
	25	20	18	15								
3	30	25	21.5	17.5								
3	32	27.5	23	19.5								
	34	30	25	21								
5	36	32	26.5	22.5								
3	38	33.5	28	. 24								
7	40	35	30	26								
8	50	45	36	32								
9	60	52 🔊	43	38								
0	70	60	50	4.5								

Fig. 4. This Table is Used in Figuring the Charge After "Rate Basis Number" is Found From Table Shown in Fig. 3

combination having a capacity of over 35,000 pounds, equivalent to a full carload. All cost finding has been based upon this unit of equipment.

In order to handle long pipe and steel rod, which forms a considerable part of the traffic in the steel district, the company employs a special method to handle these to advantage. A steel bracket, 15 in. wide by 18 in. high, is attached to the front of the car, as shown in the illustration, and a sliding door inserted in the front panel permits the pipes or rods to pass through and rest upon the platform. This method permits the handling of lengths up to 40 feet without difficulty.

Rules and Regulations

Based upon experience, the company has formulated the following "Rules and Regulations" which seem to meet with all requirements, and which should be a guidance to others in this business:

Printed Forms Used

The forms used by the company are conventional, yet meet with every requirement. Every shipment is entered upon the regular railroad form of Uniform Bill of Lading, in triplicate. The original is given to the shipper as a receipt for merchandise and also answers as a receipt for cash when charges are paid in advance. The duplicate (tissue) is retained in the book by the driver and the triplicate, signed by consignee, is returned to the office and kept on file. Where shipments are sent charges collect or where there are C. O. D. payments to be collected, an additional receipt is required.

Each driver is given a daily Route Sheet listing all stops in consecutive order and containing the product number, name and address of consignee, number of packages, weight of shipment, amount of charges and amount to be collected for transportation and for C. O. D., if

any. This sheet is made out in triplicate, the original being given to the driver, the duplicate to the cashier for checking purposes and the triplicate to the terminal agent, who thereby has a record of all shipments in process of delivery.

Cost Accounting System

The business has not been in existence long enough to have perfected a wholly satisfactory cost accounting system, but a start has been made which serves until a better one is devised.

As a basis for their tariffs, the Inter-State Motor Transport Company arrived at a unit cost of operation by charging each unit, consisting of truck and trailer, with all direct expense attached to itsalaries, oil, gasoline, interest and depreciation, insurance, etc.-and its pro rata share of all overhead expenses. The result showed a daily cost of \$40 per

Rules and Regulations

RULE 1. Rates named herein apply only when articles are shipped subject to Unlform Bill of Lading conditions.

RULE 2. Ratings: Articles tendered this company for transportation NOT classified herein, the L. C. L. ratings enumerated in Illinois Classification will apply, with the exception that all merchandise classified lower than 4th class will be charged for at 4th class rates.

ception that all merchandise classified lower than 4th class will be charged for at 4th class rates.

RULE 3. Rates named in Fig. 2 include STORE DOOR DELIVERY (or pick up) on shipments to or from our Chicago Terminal consigned to business houses or industries located within the express limits of the city or village, also manufacturing plants adjacent thereto, with the EXCEPTION of CHICAGO, as defined in "Pickup and delivery rates at Chicago."

RULE 4. MINIMUM CHARGE. No single shipment will be taken at less than 100 pounds at the rate to which the article belongs; and in no case will the charge for a single shipment be less than FIFTY (50) CENTS.

RULE 5. Shipments consigned "To the Order of" or "To Notify" any bank, firm or person cannot be accepted for transportation.

RULE 6. Published rates on Butter, Eggs, Cheese, Fresh Meat and other perishable commodities are intended to apply only during season when such articles may be handled without risk incidental to weather conditions.

RULE 7. LOADING AND UNLOADING. No single article exceeding 5000 pounds in weight or exceeding 16 feet in length, 5½ feet in width or 6 feet in height, or any one of these dimensions can be accepted without being taken up with the Traffic Manager so proper arrangements can be made to handle.

Owners are required to load and unload heavy or bulky articles which cannot be handled by the regular employees of this company; or if this company furnishes the labor a reasonable charge will be made therefor.

RULE 8. LIVE STOCK and LIVE POULTRY handled only by special arrangement.

RULE 9. The INTER-STATE MOTOR TRANSPORT CO. reserves the right to refuse any or all shipments tendered to it, with or without reason.

RULE 10. No credit will be extended unless arranged for through our Accounting Department.

Free Time Allowed for Loading and Unloading

5- or 7-ton trucks, 45 minutes allowed.
5-ton trailer, 45 minutes allowed.
3½-ton truck or smaller, 30 minutes allowed.
Any additional time consumed in the loading or unloading of material will be charged for at the following rates, except when delays are caused by employees of this company:

pany:
7-ton truck or smaller, \$2.50 per hour, minimum charge \$1.75.
5-ton trailer, \$1.50 per hour, minimum charge, \$0.75.

Pick-up or Delivery Rates at Chicago

Pickup or Delivery service in the Central Chicago District in connection with road haul will be charged for at rate of 10 cents per 100 lb. or fraction thereof for each Pickup or Delivery. (Central District defined, as follows: 14th Street on the South, Chicago Avenue on the North and Halsted Street on the West.)

Pickup or Delivery OUTSIDE of Central Chicago District in connection with road haul will be charged for at rates mentioned in Rate Basis No. 1 at classes to which articles belong (minimum charge 50 cents) for each Pickup or Delivery.

Special rates and arrangements will be made on shipments weighing over two tons tendered this company.

tendered this company.

RATE BASIS	TA	BL	E	FO	RI	RA	TES	SI	HO	W	N I	N	FIC	GU	RE	4.			A	PPI	LYI	NC	T	0	AN	DF	RO	M	FO	LLC	W	NC	P	NIO	ITS		_						
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Fig. 3. Rate Basis Table Shown in Part



A Few of the Sterling Trucks Used by the Interstate Motor Transport Company. Note Particularly the Steel Bracket in the Front and the Sliding Door in the Front Panel

unit and this amount is used as the present basis for computing charges and for figuring profit and loss.

The company has made elaborate plans for future development. Their present problem is to erect suitable branch terminals at strategic points throughout their territory. Each of these

terminals will be placed upon a self supporting basis, for in each will be conducted a commercial garage which it is expected will earn enough to cover all expenses of operation.

From the experiences of this company it is evident that motor transport service has justified itself in every way. Where it formerly took from 4 to 7 days to transport a shipment between points in this district, in addition to requiring an additional handling to and from the cars at points of shipment and destination, it can now be accomplished in 24 hours and this express service costs slightly more than a freight shipment.

Motor Trucks Facilitate Hauling of Spring Water

SOME transportation authorities contend that it is more economical to utilize horses on very short hauls and that the truck cannot compete with the slower moving equipment. An exception is noted, however, in the use of motor trucks by the State Reservation at Saratoga Springs, N. Y. The trucks in service are transporting the water that has made Saratoga Springs famous, from the Ferndell spring to the railroad—about half a mile.

This spring is one of several on the State Reservation which is about two miles from Saratoga Springs proper. The water is taken from the spring and bottled—or placed in demijohns. It is shipped in wooden crates. The containers and crates weigh about 65 lb.

For some time the Ferndell spring has been shipping its supply to the arsenal at Watervliet, and to the State House at Albany, N. Y. Shipment is made by rail. Some idea of the volume of the water shipped may be obtained from the statement that three carloads of 15,000 gal. a week is a fair average.

There are four trucks employed at the

Reservation, a 1-, 1½- and 2-ton Mack and a 2-ton Jeffrey Quad. The work accomplished by the 1½-ton Mack is of particular interest because of the vast amount the truck has done during the seven years it has been in service. At the time the writer visited the springs the truck was hauling what is said to be an average load of water to the railroad. It had on exactly 9750 lb. and was but a few minutes reaching the siding.

In comparison with a two-horse dray which was employed formerly, it is stated that 55 cases of water or about 3575 lb. is the maximum load it could carry. The horses walked all the time, and comparing their speed at four m.p.h. with that of the truck with its governor set at 15 m.p.h., plus the fact that the truck carries three times as great a load, the contention that the truck, on this short haul is superior to horses, is substantiated.

On the day the photographs were taken the truck had completed, in the morning, the hauling of 1187 empty demijohns from the siding to the spring. The work of loading and unloading is performed by the driver and two helpers. The truck is employed the entire year hauling water, although it is occasionally used for other work.

The other machines are employed on general work, the 2-ton Mack being used for hauling gravel from a bank about a mile distant from some construction work now under way by the state at the springs. The trucks are also utilized for hauling building material, supplies, etc.



The One and a Half Ton Mack Truck Leaving the Ferndell Spring With a Load of 9750 Pounds of Water

Transportation of Milk by Trucks Profitable to Small Dairyman

By C. P. SHATTUCK

HE transportation and distribution of milk, constitute a large problem with dairymen and farmers in New York State. The farmers claim that the conventional methods of collecting and distribution, including marketing, prevent their obtaining a fair return on their invest-

Scattered over a radius of approximately twenty-five miles, in the southeastern section of Albany County, N. Y., are many farms with small herds of cows. The daily supply of milk on some of

transporting the milk to Albany and bringing back the empties.

When the bids were opened it was found that three bidders had the same price, 30 cents the can. One of these was Harry LaGrange, a young farmer about four miles from Indian Fields. Being a member of the community, and acquainted with practically every member of the association, were factors in his favor. After obtaining the contract he purchased a 2-ton Federal truck having a body capacity of 70 cans. These

are of 40 qt. capacity, and weigh about 87 lbs. when filled with milk.



The majority of the small farmers were sold on the plan of the organization which included the truck's hauling the milk to an ice cream manufacturer in Albany, a concern having a demand exceeding the supply insofar as the dairy-men are concerned. The truck leaves on the in trip about eight in the morning, and picks up the cans of milk which are brought to the State highway by the It makes about 20 pick-ups, farmers. passing through Indian Fields, Coeyman Hollow, Aquetuck and Ravena, thence north to Albany. Even the dairymen in and around Ravena, which is on the West Shore Railroad, utilize the truck service.

Obtain Better Prices for Milk

The truck operates on practically scheduled time, so that the farmer has learned to bring his milk to the highway a few minutes before the truck is due. Small platforms, sufficiently high to keep the cans out of the reach of animals, have been constructed, and the truck drives alongside of these. Loading is quickly and easily accomplished.

The truck had been in operation but a short time before some of the farmers having but 20 qts. or less became converted to the idea and shipped by truck. Now the farmer is interested and can be sold on any proposition that means a lower cost of transportation or higher prices for his product. He is also interested if the transportation plan means getting his perishables to the market in better condition.



The Federal Rural Motor Express Truck Backed Up to Implement Warehouse for Farming Machinery

The truck also hauls feed, supplies, etc., and does shopping for the farmer's family. The truck is equipped with Sewell cushion wheels in front

the farms is less than a can. Those farmers having a supply sufficiently large to warrant hauls of from three to twelve miles, used to drive horses to the creameries at Stephensville or South Westerlo. The small producer made butter which he sold or traded in at the country stores. The skim milk was fed to the hogs and calves. Because the majority of the small farmers had inadequate skimming equipment, they not only lost between 40 and 50 per cent. of the cream, but the butter was not as high grade as would be obtained with proper equipment.

Motor Truck Solves Problem

During the early part of the year a few milk producers got together and organized the Indian Fields Dairy League, Inc., which was the first organization of its kind to incorporate in the State. The heads of the organization decided to market its milk and to use a motor truck. Announcement was made that bids would be received from a truck owner for



Unloading the Milk at the Creamery, Which Takes Entire Output of Dairymen's League and Solves the Marketing Problem of the Small Farmer. The Creamery Also Utilizes Motor Trucks

Functions as a Rural Express

The truck has accomplished all of this. In the first place the ice cream manufacturer pays from two to three cents a quart more because he is assured of a fresher and better product for his ice cream, and there is less liability of the milk's spoiling in shipping by truck, as the maximum time it is on the road is three hours and the longest haul about 25 miles. There is another advantage, and that is, the empties are brought back and distributed the same day, conserving the containers. Then, too, the farmer can employ on his farm the time formerly lost in going to market with his butter or hauling his milk to a creamery.

The league has evolved a plan whereby over-production can be regulated, although it is believed that the demand for cream will nearly equal the supply even during cold weather. There is an agreement that each member will drop off a can daily, and in turn, whenever the demand does not equal the supply.

The truck also functions as a rural motor express, for it hauls back from the city farming machinery, supplies, etc. Orders for all kinds of commodities are given Mr. LaGrange by the farmers and members of their household. The writer spent a few hours riding on the truck while these orders were being executed. The truck stopped at a farming implement concern for rakes, discs, etc., at a furniture store for a mattress, at a building concern for roofing paper, at the railroad depot for a trunk, etc.; in fact. the truck went shopping. In speaking of the farm implements Mr. LaGrange stated that his customers formerly were obliged to wait for days when relying upon the railroads and that he hauled nearly capacity loads on the return trip. Instead of shipping by freight the farmers now have their feed brought to their barns direct by the truck.

In addition to functioning as a rural motor express the truck is employed to haul baled hay. The hay is hauled to the railroad at Ravena from the various farms, and the truck transported in one load 34 bales or 7,140 lb. One of the feats of the truck was to haul 75 tons within a short time.

The average number of cans of milk hauled on the in trip is 66 or a gross weight of 6600. It is explained that all of the cans are not full, some farmers shipping but 20 qts. This is overloading a 2-ton truck, but Mr. LaGrange drives carefully and does not allow anyone other than himself to operate it. He does not keep any record of costs, but says he is making money, although he admits his rates are too low. To date he has had no trouble with the truck, it being on the job every day and night. Last year he operated a tractor, doing threshing for his neighbors, but says that inasmuch as he cannot be on both jobs he will stick to the rural express, which is more profitable.

Profits Buy \$17,000 Worth of Trucks in Two Years

Good Drivers and Lots of "Pep" Bring Success to South Omaha Transfer Company

Seventeen thousand dollars worth of motor trucks in two years, all paid for out of the business, and prospects for as many more in the next two years, and then some!

Pretty good record for a man and his wife doing business as a transfer company in South Omaha, don't you think?

Well, in thirty days they repeated the order to the Republic distributors and business came in so fast that soon these two additional trucks were overworked.

And then, getting a little bolder and seeing bigger returns in bigger trucks, Republic order, two 3½-ton trucks, getting Service trucks this time for a change.

all, giving transfer service that kept old customers and added new ones to the list with almost every new day.

With new business came the necessity for more trucks, and so two 2-ton Diamond-T trucks were added to the fleet, these last two units being the latest additions to the fleet at this writing.



Starting on March 1, 1917, Mily F. Fitle and his wife (and don't overlook that mention of the wife), started in business in South Omaha as the Acme Transfer Company. They had \$500 capital, unbounded energy, and faith in the future.

Their first equipment consisted of two Republic trucks, a one-ton outfit and a two tonner.

Was business good?

Still business grew, and nine months after buying the two Service trucks their money went into a 5-ton Pierce-Arrow outfit. And at the same time they bought a little Ford truck for the lightest runaround work.

Growing, you see, all the time. With Mr. and Mrs. Fitle both on the job, long hours, getting the business, looking after all details, keeping the books, and above

But this motor trucking business has not stopped growing, oh no! More trucks are bound to be added to this fleet, for Mr. and Mrs. Fitle are still on the job,

If you ask Mrs. Fitle what she thinks caused their business to grow so fast, she will answer just one word:

"Service."

It is her belief that business houses and individuals that want something moved

want it done quickly, and with the minimum of disturbance and bother. So the Fitles hire first-class drivers, drivers who know something about handling business as well as steering motor trucks, and they make it a point to handle all calls with speed and intelligence.

Their credit is so good with the truck agents with whom they have done business that they can today go into any salesroom in Omaha and select a truck and have it delivered without question as to payment. For the agent would know his payment was certain.

Two offices are now maintained by this company, one at 5028-32 South 24th St., which is the main office, and one at 311 South 12th St.

Once upon a time owners of trucks thought they were working capacity if a truck successfully negotiated the territory inside the city limits. Nowadays, however, a truck driver is like an engineer. He kisses his wife goodbye at the gate in a Georgia village and sings out to her: "I'll write you a letter from Chicago, dear!"

Municipal Bus Insures Success of Park

When the street railway company of Galesburg, Ill., declined to extend its lines to a public park, a mile and a half distant, claiming that the six months' business was not sufficient to warrant the expense of construction, the mayor and aldermen ordered a 11/2-ton G. M. C. truck, fitted with a bus body with five seats, having a capacity of twenty-five passengers. This bus now operates, in conjunction with the street cars, between the terminus of the railway and the park. Transfers from the street cars are accepted for the run to the park. The regulation fare is collected for the return trip and transfers given for the cars. All receipts, however, go to the street railway company, while the city pays the salary of the driver and the expense of maintaining the truck. The run from the terminus of the railway to the park is made in ten minutes. Patrons greatly enjoy the novelty of the ride and the move has been endorsed by the entire city. No more inexpensive method could be devised, and the problem, solved so successfully in Galesburg, might be applied to other municipalities.



This One and a Half Ton GMC Truck, Fitted With a Bus Body, Has a Seating Capacity of Twenty - five Passengers.

Trailer Interests Want Uniform Laws

Recommendations for legislation covering the registration and use of trailers have been drafted by the Trailer Manufacturers' Association of America, 110 West 40th Street, New York, and have been submitted to the committee in Washington, which drew up the proposed Uniform Traffic Bill for introduction into the various state legislatures.

State laws, city ordinances and bills pending in several states reveal a lack of uniformity in their provisions that is to be deplored because of the increase in interstate use of trucks and trailers. They also show a sad lack of knowledge regarding the uses of trailers and their effects on the roads. It is hoped, by presenting recommendations for legislation that will protect the highways and the users thereof without imposing prohibitively high registration fees and unnecessarily restrictive regulations, to secure a greater degree of uniformity in the laws and to permit of the further development of economical transportation over the highways.

Australian Accessory House Reorganized

The Auto Import Company of Australia, Limited, 139-141 Castlereagh St., Sydney, New South Wales, has announced a reorganization of the company. L. G. Hayes-Williams, who is a member of the Committee of the Motor Accessories Importers' Association of New South Wales, continues as managing director of the committee, and H. H. Smith and Harold B. Gibbs are directors.

With increased capital the company will be able to carry larger and more varied stocks of materials, and is at present on the lookout for new lines of automotive accessories.

Do-Di Finished Brass Castings—Doehler Die-Casting Co., Brooklyn, N. Y.—A booklet descriptive of the products of the Doehler Die-Casting Co., and the process which this company has perfected during the past two years. The tains testimonials from various combooklet is profusely illustrated and conpanies who have used Do-Di castings.

Highways Transport Committee Establishes Indiana Department By JOE KELLY

Looking to the development of the Indiana highway and its future usefulness, the Highways Department of the Council of National Defense has established an Indiana Department, which will co-operate with the National body to join the Indiana roads to those of contiguous states.

Tom Snyder, of Indianapolis, has been named chairman of the Indiana organization by the national officials, because of his work in highway propaganda during the war period, when Indiana led the states in doing constructive work on the utilization of the motor truck as a common carrier and public servant.

The Indiana headquarters will be in the Indianapolis Chamber of Commerce building. The state will be completely and minutely organized, being divided into five districts with district chairmen. Each county is to have a committeeman.

The Indiana department of this committee will seek to develop and direct the rural motor express lines throughout the state, to measure their utility and mode of operations, that the right methods of establishment and operation may be passed along to others considering the establishment of such routes, but also to pass the information along to the other state and national departments.

Nearly every county seat in Indiana has one or more of these rural motor expresses, connecting it with larger cities. Indianapolis serves as a large center for this work, but even with the unusual number of motor trucks arriving in Indianapolis every day, it is obvious that they are not being used to the fullest capacity.

The Return Loads Bureau will be a part of this work. A central Return Loads Bureau has been established in Indianapolis, connecting with the Return Loads bureaus in other Indiana cities. This will be a clearing house of information for the benefit of the truckman

The Indiana department will, so far as possible, supervise the establishment of these routes. Generally speaking, it seems that the best roads for the establishment of rural motor express lines parallel the interurban lines, which in turn parallel the steam roads.

Some truckmen have failed in Rural Motor Express because they have not developed business rightly. The truckman, according to Tom Snyder, must be a real business barometer. He must get quickly the business available for his community. Of course his rates must not be extortionate, but they must be sufficient to pay him. He must make money, or the experiment won't be a success.

Boyle Engineering Co., Cincinnati, O., announces that it is now occupying its new building at 2023 Reading Road. This company handles all kinds of electrical equipment for automobiles, and represents eighteen electrical concerns.

Hauling Thirteen Thousand Gallons of Milk to Detroit Daily

Ira Wilson's Fifteen Trucks Carry Milk From Twelve Milk Stations to Detroit Creamery Company

By J. E. PICKENS

Somewhat over six years ago, Ira Wilson saw an opportunity to build up a business—today his son is carrying on one of the most extensive milk hauling businesses in

The Detroit Creamery received its milk from a great many farmers, the milk being shipped in by railroad. High rates and schedules hard to meet made conditions so unsatisfactory that an appeal was finally made by the Creamery interests to the railroads to change their early train time. The "milk trains" had been going through this section at seven o'clock, and this was too early to enable the farmers to get their milk to the depot in time, as much of it was hauled five and six miles.

The list of stations, showing miles from Detroit and number of cans averaged daily, will show the extent of the business:

Stations	Miles to De	etroit Cans
Milan	42	140
Elm	18	100
Plymouth		206
Perrinsville		50
Stark	20	20
Canton	23	65
Inkster	13	20
Willis	36	270
Belleville	28	200
Cherry Hill	28	98
Holland		35
Utica		180
4 4		4 .4

A glance over the table and the great variation in the number of cans to be hauled to Detroit, 32 miles away, by the big Federal tractor and Fruehauf trailer, a load of 11½ tons. Three days later 232 cans were received, which are more than the trailer will hold. This number is increasing daily, as the present season is their best.

Accordingly, it has been necessary to put a trailer back of another truck, which will take all excess milk from Plymouth and secure the balance of its load at another station.

Willis is a fine example of the difficulties of the proposition. Willis is 36 miles from Detroit and averages 270 cans daily. Three trucks, one Federal and two Signals, start from here, each with 90 cans. This is a good load, as eight miles of poor dirt road have to be covered. Then at the Belleville station, each truck picks up from 22 to 25 cans, as the remainder of the road, 28 miles, is concrete. Belleville averages 200 cans, but 130 are taken by a Packard, leaving 70 for the Willis trucks.

Holland is another station in a bad roads' district. Here it is necessary to employ teams to cart the 35 cans average, 5 miles to Inkster, which furnishes 20 cans, a total of 55. Then a Reo, starting from Canton with 65 cans, traveling over 6 miles of dirt road to Inkster, picks up the 20 Inkster cans here and proceeds to Detroit with 85 cans, over concrete roads.

A Federal leaving Cherry Hill with 98 cans goes over 4 miles of good dirt road and picks up the 35 Holland cans at Ink-



Loading Cans at Belleville

Truck travels from Willis with ninety cans and picks up twentytwo cans here for Detroit.

The railroad's answer to the appeal need not be quoted, but significantly, the train time was set forward half an hour. That was Ira Wilson's opportunity.

He made a contract with the Detroit Creamery to haul all of the milk which the farmers brought in from Elm, Michigan, eighteen miles from Detroit. Then he kept enlarging his territory, putting on teams at Stark, Plymouth and several other towns

Team hauling was very unsatisfactory, slow and expensive, so Charles Wilson, the son who had been taken into the business, suggested trucks. He kept insisting until one truck was put on the job—and it succeeded to such an extent that teams are now only used in hauling from several stations over bad roads, to stations on good roads, where the trucks pick up the loads.

At the present time, stations are maintained at Elm, Plymouth, Perrinsville, Stark, Canton, Inkster, Willis, Belleville, Cherry Hill, Holland, Utica and Milan, twelve in all, ten in Wayne and two in Washtenaw County. Headquarters are at Elm where a service station has been erected. Here all records are kept, as well as a big stock of parts.



Tractor With Two Hundred and Four Cans of Milk, Eleven and Two-tenth Tons, From Plymouth to Detroit; a Thirty-two Mile Haul Over Concrete Roads

hauled, shows in a way the difficulties which have to be met. Yet it does not show the big problem occasioned by the fluctuation in the number of cans received at each station from day to day.

For instance, the day the writer visited Plymouth, 204 cans were received and all

ster, then goes to Detroit with 133 cans. The 50 cans at Perrinsville and 20 cans at Stark are hauled to Detroit in a Reo, starting from the former station.

At Goodrich, the Detroit Creamery has a condensory to take care of surplus milk during the busy months. Accordingly, during the time the condensory is operating, one Federal is operated between Milford and Goodrich. This haul is 50 miles one way and as a round trip must be made daily, two drivers are used. This truck will later be put on relief work at some of the other stations, or will haul milk from Milan to Detroit. Milan will be a new station, the Federal taking an average of 140 cans, 42 miles daily.

The 180 cans from Utica are handled by a Packard and a Reo, while the 100 cans from Elm are sometimes taken by Federal and sometimes by Reo. In all, Ira Wilson & Son own 15 trucks—5 Federals, 5 Reos, 2 Packards, 2 Signals and 1 Standard, twelve being on hauls every day.

The proposition is entirely one of transportation for Wilson & Son, the Detroit Creamery operating and maintaining the various stations where men are employed to weigh milk when received, and transfer to their own cans, the farmer taking his cans back at once. Settlement is made by check to the farmers once a month.

In order to keep accurate check on the cans handled, upon which Wilson's charges are based, August Rohring, the bookkeeper, devised record cards, which each driver must hand in, if passing through Elm, or mail every day, if not.

This card gives the station, number of cans taken, empty cans returned, truck number, and record of expenses—gas, oil, etc., purchased, showing amount, price and name of filling station or garage where received.

This company expects soon to open offices in Detroit. Ira Wilson gives most of his attention to the farm of nearly 500 acres which is also operated by the firm, while Charles manages the business.

The transportation end of the business alone employs 17 men, including drivers, garage men and bookkeeper. At times it is necessary to call men from the farm to take an extra truck load from some station.

The system must needs be kept elastic; trucks must be ready to haul extra milk at any time. New stations are to be started soon, as road building progresses. In fact, a station will be started in any hamlet where farmers will bring in their milk.

The truck system has relieved the farmers of the trouble experienced by the railroad method; it has lessened the cost to the Creamery, as the extra handling from Detroit station to Creamery has been eliminated; it has more than doubled the amount of milk furnished by this district; it has eliminated the loss from spoilage due to waits at stations, and the milk arrives in Detroit earlier than by train; and it has built up a big business for Ira Wilson & Son—a business which is constantly growing and expanding.

Mohawk Rubber Co., Akron, Ohio, is about to open a new branch at 417 North Harwood St., Dallas, Texas. H. A. Sutton will be in charge.

British Import Restrictions Cannot be Lifted From Motor Vehicles

LONDON, June 16—The Automobile Section of the American Chamber of Commerce in London has made representations to the British Board of Trade with the view to having the import restrictions on American motor cars further relaxed, if not entirely removed. At present the importation of motor vehicles and parts thereof is limited to 50 per cent. of the 1913 imports up to September 1, 1919, in proportionate monthly quantities.

Sir Auckland Geddes, president of the Board of Trade, said that the Board of Trade could not consider any one trade or industry by itself, but must look at everything with a view to the best interests of the nation. From this point of view the matter of maintaining Great Britain's financial position and therefore the position of her exchanges was the essential consideration.

While the ration already fixed will not be reconsidered until September 1, at which time the government has promised to review the entire import and export position, the Board of Trade has agreed to a concession in favor of importers not represented in 1913 but who have since established sizable businesses dependent on automobiles from America, whereby the Board of Trade will grant licenses up to the total quantity according to any plan of allocation among the importers concerned, which is unanimously agreed to by all members of the automobile section of the American Chamber.

The Board of Trade's only condition is that the total of the concession already granted is not to be exceeded up till September 1. This will leave the complete operation of the concession in the hands of the American Chamber of Commerce in London.

Have you ever noticed that moral lessons have a way of making their appearance, for all our natural dodging of big issues? You can't get away from the TRUTH, for Truth is up and demonstrating night and day. On a single stretch of road, recently, between Detroit and Chicago, I recently saw one of those vivid lessons. Touring in a car, we no longer had the absolute, undisputed right of way. There were motor trucks, of all kinds and sizes, enroute to some market or other. They were loaded to the gunwales with merchandise, and the fellows at the wheels were smiling. Here and there a team of horses oozed past, or ran to the side of the road to get out of the way while the rest of us passed. But the trucks were in the vast majority. After all, moving goods is more vital and important than moving people-for pleasure.

International India Rubber Corporation, South Bend, Ind., has changed the guarantee on its South Bend tires to 7000 miles

New Publications

Motor Vehicle Engineering-Engines, by Ethelbert Favary, 330 pages, 6 x 9, 133 illustrations, \$3. McGraw-Hill Book Co., Inc., 239 W. 39th St., New York City. This book is intended as a handbook for automobile designers and engineers, and aims to give a technical education in its subject to those who lack the advantages of technical training. It is based on data gathered from leading automobile manufacturers and covers the subject of modern motor vehicle engineering practice in relation to engine design. It contains simple formulae for determining the strength and dimensions of the various parts of the engine and detail drawings and diagrams of value to draftsmen and

Practical Exporting.—B. Olney Hough, 530 pages, cloth, \$5 postpaid. American Exporter, 17 Battery Place, New York City, pub. This book is a ready reference in answering questions of export procedure. It contains 39 reproductions of documents of all types used in exporting, properly filled in. The author has had twenty years experience as an exporter in various countries.

Government Publishing History of Prices

A history of prices during the war, begun under the War Industries Board, and covering the whole field of prices from the beginning of 1913 to the end of 1918, is now in course of preparation by the Price Section of the War Trade Board. This work when completed, will include 57 bulletins, which will be issued piecemeal, beginning with Bulletin No. 2 on "International Price Comparisons." There is a complete price inquiry of interest to iron and steel men included in this series.

Champion Spark Plug Co. Has Inter-City Truck Service.—The Champion Spark Plug Co., of Toledo, Ohio, is using a two-ton Garford truck on a daily schedule between Detroit and Toledo. The truck leaves Toledo at 7.30 o'clock each morning on its 68-mile trip. After delivering 20,000 spark plugs to a Detroit automobile manufacturer, the truck is loaded with porcelain insulators at the Champion company's plant in Detroit and returns to Toledo. Including the time required in loading and unloading the round-trip of 150 miles is usually completed in less than 10 hours. The truck averages 10 miles per gallon of gasoline and 47 miles per gallon of oil.

The Universal Auto Co., Hartford, Conn., has been appointed official Goodyear solid, cushion and pneumatic truck tire service station in that vicinity. A 250-ton hydraulic press has been installed to handle the business.



The Great Tap Root of America's Transportation System

S. Firestone

Ship by Truck Broadens the Scope and Multiplies the Usefulness of Our Railroads.

The basic economic reason is, that trucks can haul goods at a profit in territories and under conditions in which railroads would haul them

By the judicious extension of truck-express com-panies, the building of expensive branch railroad lines of doubtful earning capacity may be deferred until such time as the truck has developed sufficient tonnage to justify railroad construction.

The truck is the most adaptable of freight-transport methods. With the universal extension of good roads the truck can penetrate to the centers of freight production. It can follow the lines of richest territory unhampered by considerations of difficult gradients or sharp curves.

The truck operates when and where the traffic calls it. The truck does not involve a great investment in the hope of future returns. It begins at once to show profits. Or if the field of operation does not quickly produce freight in paying quantities, the truck can be transferred to a region of profitable tonnage.

Ship by Truck does more than eliminate the necessity of costly branch-line building.

It relieves the railroads of a large percentage of the short-haul and less-than-car-load-lot ship-ments, which add to rail difficulties without increasing dividends.

Ship by Truck, the tap root of transportation, goes deep into the rich fertility of freight origin.

Ship by Truck brings to the railroads tonnage that could be obtained in no other way. It brings minerals from the mountain fastnesses, timber from the forests, food products from the inaccessible farms and orchards.

Ship by Truck multiplies the normal tonnage many-fold. It will be one of the most potent agents for increasing the freight haulage of America's railroads and aiding them to a profitable basis of operation.

Ship by Truck. Encourage it in your business, in your industry. For by so doing you make more rapid and certain the movement of your own shipments and you aid directly in improving our national transportation.



The fact is Over half the truck Tonnage
of America is carried on estone Tires

The Truck That Didn't Come Back

ERHAPS this story should have been written chronologically; but there is scriptural warrant for the assertion that the last shall be first, so here goes in the order that Harry Wheaton would probably have selected had he been consulted in the matter, with regard for facts rather than their sequence.

It may have been his ingrained disregard for the conventional that led Wheaton to greet Tom Mumford with a smile of assurance when the latter entered the salesroom of Armstrong & Wright, distributors of Biltrite motor

Three months earlier Wheaton had come back to the office with a contract for a two-ton Biltrite that had the name of Tom Mumford on the dotted line, and had been scored roundly by his superiors for taking such an order. Not but that Tom Mumford was good for the price of a truck-a dozen of them, if he wanted that many. He was one of the most successful farmers in the Rock River district, and his word was as good as the money anywhere he was known.

"But what in thunder is he going to do with a truck out there in the country, especially with winter coming on, and everything dead on the farm until spring, at least?" inquired Armstrong, who could always be depended upon to furnish fireworks for the entire establishment.

"He's going to make some money," was Wheaton's quiet challenge.

"Huh, make money," snorted Armstrong, contemptuously, "not for us, he We'll take our profits out in won't. trouble."

And here was Mumford, the first time he had ever stepped inside the salesroom of Armstrong & Wright; the first time, in fact, that Wheaton had seen him since he delivered the truck, although he had in a way kept in touch with what was

If Mumford had been gifted with ability to read the thoughts of others he would have been amused by the mental flip-flops that were being executed in the back of Wheaton's cranium. However, he was a mere mortal, given to the practical things of life, so he wasted no time in this manner. The sight of Mumford carried Wheaton back to a bleak November day, three months before, when the two of them stood in the doorway of one of the big barns on the Mumford farm, sheltered from the cold rain that was pelting down outside.

"That's the funniest story I've heard since a fellow came along here twenty years ago and told me how I could become a millionaire by planting osage orange hedges all over my place," said Mumford, shaking with laughter.

"What is there so funny about it?" inquired Wheaton.

"Why, the idea that I could make any money by owning a motor truck. I've just as much use for a truck on this farm as you'd have for a new milch cow in your garage business."

"But you don't get the big idea," protested Wheaton.

Mumford shrugged his shoulders expressively.

"No, I don't," he admitted, "I guess I am a bit dense."

"How many cows have you?"

"Forty-four."

"And you sell all your milk to the Rock River Creamery Company?'

Yes, but why?"

"That's what I'm coming to. And how do you deliver it?"

I haul it over to the milk station every morning, of course, and it goes in on the electric car."

"Why don't you take it to the creamery yourself?"

"I can't afford to give the time. It takes the best part of an hour now to make the three miles to the station with two horses. Add eight miles more to that to get to town and you can see where a whole day would be shot to pieces going there and back. It's out of the question now, and in the summer time when there's a rush on the farm it would be even worse."

"How much do you pay the interurban company every month for hauling your milk in and bringing the empty cans out?"

Mumford thought for a minute.

"Well, I can't say offhand, but it's a blamed sight more than I wish it was."

"Are there any more farmers on the way to the electric line situated like you are?" persisted Wheaton.

"Oh, yes, there's Tom Wright and Fred Gustin, on the main road, and Charlev Sheratt just a little way to the south. They don't any of them have as many cows as I do, but they ship milk every day, the same way."

"Suppose," said Wheaton, "that you went to them and offered to lay their milk down at the creamery every day, picking it up at their houses, and returning their empty cans to them, for the same price as the interurban charges them for hauling their milk into town, or even a little bit more, to cover your expense in handling it. Do you think they would accept such a proposition?"

Mumford studied Wheaton for a moment before making reply, uncertain as

to whether the latter was in earnest.
"Of course they would," he replied. "Any man in his right mind would grab at a chance like that."

"Then why don't you put the proposition up to them?" went on Wheaton. "With a motor truck you could run into town in an hour-there's a good road all the way. A two-ton truck would do the You'd get it all cleaned up in

about the same time it takes you to drive over to the interurban and back now. You'd be rid of the annoyance that comes from missing empties, because the creamery forgot to send the full number of cans or the interurban crew neglected to pick them all up. You'd be getting your milk laid down at the creamery for less than it costs you now, and you'd have three of your neighbors paying for your truck besides. In the summer you would be sparing your horses just that much when you needed them in the fields, and you'd have the truck for hauling purposes on the farm between times. Can you ask for a better proposition?"

Tom Mumford scratched his head as he thought hard.

"It sounds reasonable enough," he admitted, at length, "but I've had so many fellows who wanted to help me get rich that I'm a bit skeptical until the figures are put down in black and white and I've been shown."

"I don't blame you a bit," agreed Wheaton. "In fact, I'd rather deal with a man of your type, because if I can't convince you as to how you can save money I don't want to sell you a truck. It would be bad for you-but it would be much worse for us in the end, because naturally you wouldn't be very much of a booster."

The men repaired to the house, and with the hauling charges in his possession Wheaton quickly made a rough comparison of costs under the present system and the proposed that was conservative yet sufficiently favorable to back up his argument.

"It's possible that after a while, if you let it be known that you were willing to do so, you might be able to pick up some freight for people along the line that you could deliver on your way out, and thus increase the earning power of your truck." Wheaton added. "It would be quicker transportation than they can get

The outcome was that in due season a two-ton Biltrite was turned over to Tom Mumford, and payment in full for the same was promptly forthcoming.

Followed a winter of unprecedented severity. Never had the mercury hugged the bottom of the tube with such unbroken persistence; never had the snow been so plentiful and of such duration. Traffic was paralyzed, schedules had gone by the board, everything was upset in the city and outside.

And here was Tom Mumford. There could be only one answer to his presence. Wheaton's spirits fell in spite of himself.

"I came in to tell you about that truck," he began, after an exchange of greetings.

That settled it. From where he stood Wheaton could not see Armstrong at his desk, but he knew, without looking, that the senior member of the firm, who had been avowedly skeptical from the

The Hands and the Arms of the Driver

ROSS GEARS

The Steering Gears
Predominate
Motor Trucks

SINCE the steering gear is the only part of a motor truck in which human strength is concerned, which is constantly in use while the truck is in operation, it must follow that the efficiency of the truck depends very largely upon the hands and the arms of the driver.

However perfect the truck may be mechanically in other respects, if the steering gear is so hard to operate as to cause an excessive strain on the hands and arms that turn the steering wheel, it is impossible to secure real efficiency from either the man or the truck that he drives. On the other hand, if the steering gear is easy to operate it conserves the strength of the driver and increases his efficiency. Easy steering means a bigger day's work more easily done, and driver and employer are both better satisfied.

The bearing surfaces in the screw and nut mechanism of Ross Steering Gears are so enormous that it is easy to steer the truck under all conditions. These bearing surfaces, together with the general design of the gear and Ross quality in materials and workmanship, guarantee also an unusual degree of safety and reliability.

Over 115 manufacturers, representing considerably more than half the entire motor truck industry, have recognized the superiority of Ross Gears by using them as standard equipment on their trucks. Their choice of Ross Gears is to a certain degree a guarantee of their complete product, as it is reasonable to suppose that each one has given the same careful attention to every detail in the construction of his truck.

Orite for catalog and any special information desired.

ROSS GEAR & TOOL COMPANY, 760 Heath St., Lafayette, Ind.

outset, and who had overheard every word, was framing up one of those Itold-you-so speeches that he was so fond of delivering.

"What's the matter with the truck?" ventured Wheaton, determined to cut an unpleasant session as short as possible.

"Nothing at all," was the cheery rejoinder, "but before I tell you about the truck I want to know how soon I can get a trailer—a one-ton will do me, I guess."

Wheaton gasped.

"A trailer?" he managed to ejaculate. "Yes, sure. I need one right now. You know that tip you gave me on freight. Well, you ought to see the way that worked out. I've got all the milk my hired man can haul in every day, and I've got contracts with every storekeeper in Halfway to do their delivering from the wholesale houses in Rock River for them at a better price than they used to pay the electric line or the steam road, because I pick the stuff up in town and lay it down at their doors, and they get it so much quicker, without any worry or handling on their part. I'm going to

put a trailer on just as soon as I can get one, and then I'll be able to handle the business that I have to turn down now. That certainly was a good hunch you gave me. The rest of the fellows have been kicking themselves ever since because they didn't think of it, and beat me to it."

The astute Mr. Armstrong was all ears, although he pretended to be searching through some papers on his desk.

Wheaton made out a bill of sale for a one-ton trailer, and then, half-maliciously, remembering well what had gone before, took the agreement over and laid it down in front of his chief.

"Do you think it would be safe to sell Mumford a trailer?" he inquired, adding, "You know, he has a truck now."

"Safe," snorted Armstrong, "what's the matter with you; of course it's safe. Didn't I tell you right along that he'd make good with that truck. All you've got to do is to show a fellow and you'll get the business. You'd better get out there and look up some of the other prospects you've been neglecting all this time"

initiative of the Fiat Company. At the present time, of the 400 distinct routes, having a distance of 8070 miles, 350 are fed by Fiat vehicles exclusively, the total length of these lines being 6950 miles,

Changes in California Vehicle Act

OAKLAND, CAL., June 20.—Governor Stephens has signed the Eksward bill, amending the motor vehicle act of California. The bill becomes effective, for all matters excepting those relating to registration and administration, on July 21.

The speed limit has been raised to thirty-five miles per hour, that is, of course, during the daytime on an unobstructed highway. It was decided, after a conference with automobilists and traffic officers, that the law should provide for the greatest freedom and use of the highways consistent with safety to the public and rights of others.

Administration and registration have been so modified by the bill as to effect substantial economies in the motor vehicle department. The definition of chauffeur has been extended to include paid operators of vehicles transporting property. It is planned to use the additional funds obtained through this means in the employment of state highway inspectors.

Provisions facilitating the transfer of automobiles, regulation of headlights, establishment of stop and turning signals, revocation of licenses by the department for reckless driving, and the extension of operators' licenses until revoked, are also included in the bill.

Importers and Exporters in Argentina, Chile, Brazil and Mexico

The following lists of importers, exporters, and commission merchants can be obtained from the Bureau of Foreign and Domestic Commerce or its district or co-operative offices by referring to the file number given:

File No.

sion merchants, Chile 9796

Certain counties fight against putting through bond deals for connecting up important cross-country highways, as they would fight a seven-headed dragon. Can you figure out why? Roads are much like arteries in the human body. Just a single one, all by itself, is important but sort of worthless when it comes to keeping the whole system alive. If most folks applied such truck logic to themselves and their own bodies, they'd build up arteries in one leg, or an arm, and let th' rest of their carcasses die.

GMC Truck Used as a Wrecking Outfit

Wrecking cars for use in handling badly smashed passenger automobiles are usually made from rebuilt passenger cars, but J. W. Lyerly, manager of the Ansley Garage Co., of Atlanta, Ga., after trying four makeshifts of this type, finally decided he wanted a real wrecking outfit and devised one with a one-ton GMC truck chassis as the basis.

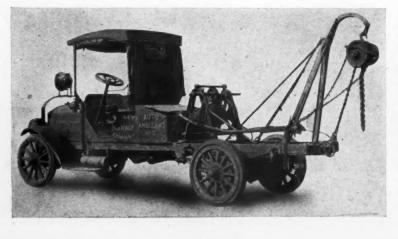
With this sturdy foundation to work on, Mr. Lyerly designed a derrick of channel and bar steel, fitted with a twoton chain block, and this handles any wreck that can be devised by the worst of careless driving. In addition, a sturdy windlass is mounted on the truck chassis, forward of the rear axle, and 250 ft. of steel cable on the windlass drum is used to yank a wreck into working distance if it has gone over an embankment or off the road.

The Lyerly wrecking outfit has been thoroughly tried out, and is a safe pattern for any service station handling wrecking work.

Motor Vehicles Used as Feeders in Italy

The use of motor vehicles as feeders to the railroads is believed to be more extended in Italy than in any other country in the world. This is owing to the fact that Italy is a mountainous country in which railroad lines can only be built at considerable cost and labor. The total length of normal track railroad lines in Italy is 8700 miles, while the length of routes over which motor services are run with a fixed time table is 8070 miles. There are 400 of these lines over which regular public services are run either as feeders to the railroad or in order to open up country which has remained inaccessible to the railroad.

These public automobile services for goods and passengers were begun in a small way ten years ago in order to meet the deficiencies of the railroad system. They immediately proved popular and rapidly extended until the regular routes are now almost equal in length to the railroad lines. The first of these public automobile services was started on the



After Trying Four Makeshift Wrecking Outfits of the Rebuilt Passenger Car Type, J. W. Lyerly, Manager of the Ansley Garage Company, Atlanta, Ga., Devised This Outfit, With a GMCTruck as the Basis



The Sivyer Service of providing Electric Steel Castings has for its objects the decrease of machining costs and the increase of wearing-quality and life. Both are attained by methods which result from long experience and begin with the design of the casting itself. When we find that a casting we are asked to furnish is of a design not consistent with good foundry practice, we study its function in the completed unit and offer the necessary suggestions to make it a really practicable casting job without affecting in any way its function and efficiency.

Secondly, Sivyer Service analyzes the functions of the casting and specifies the proper composition steel for the job; long experience with carbon and alloy steels has enabled us to reduce costs and increase quality remarkably for many different industries.

Thirdly, Sivyer Service makes a careful study of the pattern and molding prob-



lems involved, for improper gating and insufficient risers are often the greatest wasters of machining labor and metal.

Fourthly, Sivyer Service analyzes carefully the proper annealing methods to be used and controls their proper application through unfailingly efficient equipment and men. In short, the Sivyer Service supervises every step necessary to secure unusually and unfailingly good castings of electric steel. It never relies on one factor alone, relies very little on the natural freedom of electric steel from occluded gases and on its commonly recognized merit in resisting crystallization. It also depends but little on the inherent scientific accuracy of the electric furnace process. From casting-design to sand-blasting and tumbling, the fundamental superiority of Sivyer Steel is due to its men and metal. Their value is best proved by the fact that, although the production of steel castings is generally looked upon as a local one. the Sivyer market is national.

Nthe making of Sivyer Castings, all the men, methods and metals employed, work to one end—uniform excellence. Even so seemingly slight a factor as the hardness to which the molding sand is compacted, is freed from the variations inherent in the use of muscle power only, and made uniform for each job by the use of molding machines scientifically superintended. In this way Sivyer Castings are freed from the surface defects due to loose molds and from the interior flaws and faults due to gases imprisoned by molds that are too hard. The low machining costs thus obtained have greatly aided in winning for Sivyer Castings their national market.



How Organized Truckmen Established a Division in Indianapolis Chamber of Commerce

By JOE KELLY

OW the right sort of organization among the truckmen of a city can work for the general good of a city has been shown in Indianapolis through the activities of the Indianapolis Transfer Association. This association is composed of men who, in their rendering of service to the community, use trucks for hauling.

The things which have been done speak very well for the men who have developed the Indianapolis Transfer Association and who have seen the great opportunities of the larger service which these organized truckmen could perform.

As part of the Indianapolis Chamber of Commerce, the transfer men have started to enlarge their service. For instance, they have begun a fight for better streets, and their fight has been won by the announcement from the city officials that many streets are to be resurfaced to furnish better hauling facilities where the traffic is heaviest.

The Public Pays for Bad Roads

"The public pays for all of this," said W. S. Frye, chairman of the transfer division of the Indianapolis Chamber of Commerce, pointing out the bad streets which motor trucks had to pass over. "It's cheaper to have good streets and good roads than it is to bear the expense and the delays of bad streets and poor roads. The city that does not improve its streets to take care of its transfer work is short-sighted, indeed."

So it will be only a matter of weeks until the big program of street resurfacing decided upon will be completed.

A reference to some war history in Indianapolis shows how eternal vigilance keeps down the cost of motor truck transportation and what it avails the transfer association on the job.

One day, the Indiana Council of Defence passed a resolution, coming from a railroad president, that during the war work on the track elevation plans would be held in abeyance. This was to save man power, which was a purely patriotic thought on the part of this railroad man, who did not realize how important was motor truck transportation to feed the railroads and accommodate the public depending on the railroads.

During this work, the transfer men were working at big disadvantages. They were making wide detours and passing over crossings where long waits were necessitated. Of course, the public paid the bills.

Association Has Track Elevation Work Continued

The transfer men saw another side to this and they appealed to the State Council of Defense and finally to the Railroad Administration, headed then by William McAdoo. The transfer men gathered a fund of real information which shows that it was costing the people of Indianapolis \$25,000 a day in transfer expense by the waits and the delays of this track elevation and that it was too costly, even though man power was needed, to be delayed until after the war. An investigator was sent to Indianapolis from the rail administration and he ordered that the track elevation should proceed. This was a great victory for the organized Indianapolis transfer men.

The Indianapolis Transfer Association is composed of men who have expensive motor truck equipment—some of it elaborate, with fortunes invested in their business.

That they shall serve best and profit most, they have recognized that their patrons must be educated to co-operate with them. Indianapolis hauling, so far as household goods is concerned, is on the hourly basis, instead of the load. The Transfer Association has carried on an educational campaign to persuade the housewife to prepare for the coming of the moving man so that every minute of the time of van and men may be utilized.

The association recognizes that the function of its members is not just hauling, but that it must keep up with the pace of other business and develop and expand accordingly. The transfer men must have expensive equipment and high grade motor operators and the right sort of management to keep his business going so as to make a profit and give his client economical and safe service.

"We've done a lot through organization," stated William G. Kreis, the president of the association. "We've done more than I ever thought we would, and the more we do, the easier it is to do bigger things.

"We're now buying oil on a co-operative basis, and we'll soon be buying our tires and doing many other things co-operatively. If an institution, a factory or a municipality can have scientifically trained purchasing agents, why can't we do our buying in the right way?

"Say, you should attend some of our meetings. When we first started, we had a hard time getting members to attend. Since then they have learned that it is to everybody's interest to go to these meetings and luncheons. We try to make the meetings instructive and educational, and we are equipped to show motion pictures of the use of the motor truck in transportation. There's a lot of good stuff in the pictures along this line, and it's mighty instructive.

"Most of us have not been running our business correctly, just as most other business men have not. We have learned to know what it costs us to operate and

how much we must get to make a profit, And, of course, we must have a profit, for that's why we're in business.

"We have learned how to keep our trucks in condition, and how to keep them running. That's a long story in itself—how to keep down repairs on trucks and how to make the drivers be careful of the trucks. We know more about hiring help and about the value of the careful driver, even though he costs more per hour, than the cheap driver.

"The motor truck in the transfer business overland or in the cities is just starting its career of success. We fellows can picture ourselves as pioneers in a new business."

Hauling by Motor Truck in the Cincinnati District Increasing

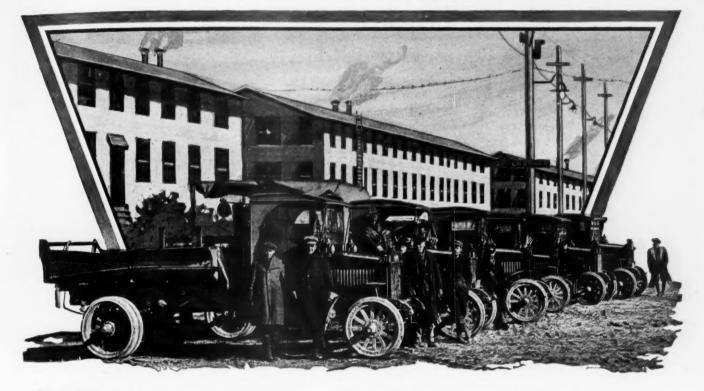
Motor truck hauling in the Cincinnati district is proving successful with such companies that are sticking to prices. Perhaps the best example along this line is noted in the activities of the Cincinnati and Dayton Motor Delivery Company, which started operating in June. 1918, putting into service two 31/2-ton Schacht trucks, making daily trips, with intermediate stops, between Cincinnati and Dayton, Ohio, a distance of 60 miles. The company is now operating six trucks on the same run, two 1-ton, one 2-ton, two 31/2-ton and one 5-ton. Several of the trucks have removable tops, which this company has found to be an advantage when using a crane to unload or where the trucks go into buildings that have low doorways.

The company has increased its business gradually, owing to the fact that it is better equipped than its competitors and has been able to give continuous service, having been in operation every day for the past year, and having the necessary equipment to take care of the overload. This concern insures all goods while in transit, covering against loss by fire or through derailment of the truck.

Very little of this firm's business is done directly with the farmer. The bulk is merchandise, raw materials and supplies. Several other truck lines compete against it. These haul below freight rates, but they find themselves eliminated as their equipment wears out.

The company is obtaining the co-operation of the shippers, but states it will take considerable time to get the majority of them in the habit of using truck transportation. It is somewhat handicapped in seeking new customers by the fact that there have been so many truck lines started in Cincinnati that have failed, often leaving the shipper in an embarrassing position, all of which tends to discount the value of motor trucks in the eyes of the shipper.

"The Railway, the Waterway, the Highway, are the Trinity of Transportation, and these three are one."—William C. Redfield, Secretary of Commerce.



Reliable and powerful without exception - says government official



"The fleet of twenty-seven Atterbury trucks in service under my supervision, without exception, manifested themselves as most reliable and powerful.

"This covers an experience of two hundred or more trucks on the same operation.

"Yours very truly, (Signed)

"Chas. Burkelman, Supt. of Equipment, Government Construction Operation, Camp Upton." ATTERBURY dealers know that this experience is not unusual with Atterbury trucks.

Every day Atterburys are proving themselves powerful and reliable under conditions even more severe. In fact, they have proven these qualities for 10 years.

That is why all Atterbury dealers are so enthusiastic. They know that no matter how heavy the load is —how severe the test—the Atterbury always gives 100% performance.

It will pay you to investigate the Atterbury franchise,

ATTERBURY MOTOR CAR CO.

BUFFALO, N. Y.

ATTICE BURY

MOTOR TRUCKS OF MAXIMUM SERVICE

The Motor Truck: The Aladdin's Lamp of the Northwest

By WARREN EUGENE CRANE

HE motor truck has been the cause of a big saving to business firms of the Northwest. The Globe Grain & Milling Company, of Seattle, is operating one 31/2-ton Standard truck and one 31/2ton Garford truck to haul grain to various dairymen located within a radius of ten miles from their warehouse. They are carrying the grain with trucks at a cost of 87 cents per ton as compared with \$2.30 per ton with horses.

Mr. F. E. Ford, manager of the Seattle office of the company, claims that he has found that it costs an average of fifteen dollars a day to operate a $3\frac{1}{2}$ ton motor truck. These figures include the salary of the driver and twenty per cent. depreciation for the first year, with fifteen per cent. for each year thereafter. it is nearly surrounded by water and in the places where it would ordinarily be approached by land, dense forests blocked the way. Only recently has the Olympic Highway been cut through.

The motor truck has been a great aid in the development of this section. The war also has had a stimulating effect upon this territory, because the government has needed the spruce from the big forests for its airplanes and has used an army of men and motor trucks to level the huge timbers and to carry them to the mills. Trucks and trailers were also used to carry boats and engines to out-of-the-way places among the moun-

A 5-ton Standard truck with an 81/2ton Universal trailer has been in operation in the Signal Corps of the United States Army near Port Angeles, Washington. It operated six months lacking three days, for twenty-four hours a day without a breakdown, over macadam, plank, corduroy and dirt roads. On one occasion it hauled a locomotive for a logging train, weighing twenty-one tons, a distance of thirty miles under many adverse road conditions. At another time it hauled the Chicaloon, a sixteen-ton motor boat from Port Angeles, Washington, to the interior of the Olympic Peninsula. They made an average of four miles and a half to a gallon of gasoline, and thirty miles to a gallon of oil.

Sergeant C. J. Morris in charge of the work was given instructions to work at top speed. In order to keep the truck going at a high grade of efficiency, he insisted that the oil in the transmission, motor and differential should be changed

every thousand miles.

The motor truck and trailer have been important factors in the logging industry in the Northwest. Up to the time of the motor truck, the big lumber companies had many tracts of land which they had not cleared because the cost of building a narrow gauge railroad to them would have offset the possible return from the sale of the timber. After the installation of motor trucks and trailers, the cost was only 95 cents per thousand, as compared with \$2.75 per thousand with narrow gauge railroads, and \$3.50 per thousand feet with horses.

"The motor truck has been a wonderful factor in the winning of the war," said William Hartford, sales manager of the truck department of the Shields-Livengood Motor Company, of Seattle. "Out here in the Pacific Northwest they have helped to clear the forests of spruce for airplanes, and to carry army supplies



The Chicaloon, a Sixteen-Ton Motor Boat, on Its Way, by Motor Truck and Trailer, From Port Angeles to the Interior of the Olympic Peninsula, a Distance of Thirty Miles

"Motor trucks have carried ten thousand tons of grain for our company with excellent results," said Mr. Ford. "I believe that they have meant a big saving to the public because they have low-ered transportation costs. Whenever you decrease the cost of carrying a product, you also lower its selling price. An added advantage is that the motor truck has forced the Pacific Northwest States to build better roads.

"Another factor that has forced us to use motor trucks is competition. If our competitor can sell his products at a lower price than we can and still make money, because he uses motor trucks, then it devolves upon us to give up our horses in order to compete with him."

The motor truck, however, has had a still more wonderful influence in clearing away the dense forests in the Olympic Peninsula. Before the entry of the motor truck the Olympics had been one part of the country which had not been carefully explored by Americans. The reason for this isolation was the fact that



A Five-Ton Truck and Eight and One-Half Ton Trailer Hauling a Twenty-one Ton Locomotive Over the Rough Roads of the Pacific Northwest



Announcing
Clark Steel Wheels
for
Pneumatic
Truck Tires

All type tires All capacity trucks

Write for booklet giving complete data on these new wheels.

CLARK Steel Wheels for pneumatic tires are now offered to the motor truck industry.

Designed in co-operation with the large tire companies to enable truck users to attain greater speed, increased mileage and lower operating costs.

Clark Equipment is found only on good motor trucks

CLARK EQUIPMENT COMPANY BUCHANAN — MICHIGAN to the various cantonments. Motor trucks have also been big factors in the construction of roads through the forests to tracts of timber that have hitherto been inaccessible."

The day of the motor truck is here, and every business man or government official who has a transportation problem should install a motor truck if he wishes his organization to attain the highest degree of efficiency.

Orders Coming in for Trucks to be Used in Road Building

DETROIT, MICH., May 31.—Truck manufacturers are beginning to feel the influence that the big highway construction program is going to have on their business. Orders for truck equipment that will participate in this big item in America's reconstruction plans are beginning to show up at the factories.

Vice-president and director of sales Harry Conlon, of the Acason Motor Truck Company, has been shipping a large number of Acason trucks to contractors, highway commissioners and public service boards. Trucks of all capacity will be used in this big program if present orders are any indication. Mr. Conlon's records show that the one-ton, two-, three and one-half, and five-ton trucks are getting the call for this class of work, and once in a while orders for tractors that would haul up to ten tons of material come in.

"Some contractors who intend to use motorized equipment on highway work," declares Mr. Conlon, "realize the big business that is ahead of the motor truck manufacturers and are placing orders in advance so as to be assured of delivery. It is to those who have not anticipated their needs that I want to call attention that they should begin planning. The export business is opening up strong, regular commercial traffic is getting into the swing, and it is only a question of time before the truck manufacturers will be swamped with business the same as the passenger car manufacturers are today. Every truck manufacturer wants to get truck equipment into the hands of highway builders, but it is my opinion that the prospective purchaser for this type of equipment should help the manufacturer so that production programs will be disarranged as little as possible. While the truck manufacturer may be able to take care of chassis demands there are other things to be considered. This is especially true in regard to body equipment. Therefore the prospective purchasers for truck equipment for highway work must do some anticipating if they expect prompt deliveries.'

Motor truck boosters are of the progressive sort. The best example I ever saw was of a stretch of fine public highway through fine farming land, that was broken by a half mile of the worst road a fellow ever saw. It was so bad that there used to be two dozen autos mired there every day. And it seemed that jealousy was responsible for it—one county lacked the git-up-and-git neces-

sary to put anything over. It was sore on the next door county. What did those truck fellows do, operating over that long highway, but set to work and raise their own appropriation for fixing up the broken link. They filled the gap and sailed on their way. That is the spirit of all truckdom—the MODERN SPIRIT.

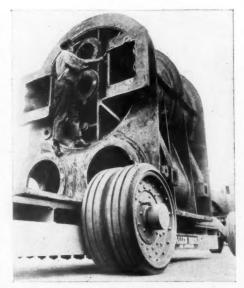
Here's Some Heavy Hauling by Motor Truck and Trailer

What is probably the heaviest load ever placed on rubber tires, was carried recently by a trailer-truck owned by Allen Brothers, Los Angeles, Cal. A giant marine engine cylinder, weighing 40 tons, was hauled 23 miles over city streets and country highways without any noticeable effect on the tires, in two hours and 45 minutes.

The "coast" trucking contractors designed and had built this trailer truck with a carrying capacity of 100,000 lb. The truck itself weighs 12,700 lb., and the specially designed rear wheels weigh 2050 lb. each. The wheels of the truck are equipped with Goodrich solid truck tires. The two rear wheels are shod with four 40 x 10 tires, while 40 x 12's are used on the two front wheels of the trailer truck.

In order to secure the proper traction, the truck was ballasted with an engine stand weighing nearly seven tons—a cargo, in itself, much heavier than the average truck load. Among other big tasks scheduled for Allen Brothers' truck is transporting rifle barrels for the mammoth 16 inch coast defense guns to be installed in Ft. McArthur near Los Angeles.

The demonstration proves the power of solid tires to carry ponderous loads, and further points out that truck and tire manufacturers have solved heavy transportation problems and that an adequate highway system is the only drawback to extensive heavy transportation over the roads of the country.



Transporting a Forty Ton Casting Overland by Motor Truck and Trailer

Splitdorf Foremen Study Production Methods

The Splitdorf Electrical Co., of Newark, N. J., has organized a group of foremen of the various departments to study modern production methods. The object of the course is to train the men in the principles of foremanship, to develop their qualities of leadership and to give them a broad view of their work and of industry as a whole. The course is under the direction of John Calder, mechanical engineer, of the Business Training Corporation, 185 Madison Avenue, New York, which has charge of all the details and supplies the text-books.

The course lasts three months and the men devote about three hours of spare time to the training. It consists of textbook study, quiz questions, practical problems, lectures and conferences. The general subjects covered by the training include the handling of men; materials from purchase to final product; plant plan and layout; the principles of organization; the elements of cost finding and cost accounting; record keeping; industrial relations; hiring and firing; welfare work; safety; plant teamwork, etc. Everything is taken up in a practical way and the men are encouraged to apply the ideas they acquire.

Thirty Trucks Displace Four Thousand Camels

An enterprising Eastern Turkestan Agricultural Colonization Company has just purchased from the Wichita Falls Motor Co., Wichita Falls, Texas. thirty trucks to supply the colonies in the vicinity of Kulja with the necessities of life, which, owing to the natural and political barriers of the West, must come from the distant port of Tientsin. These thirty trucks will displace a caravan of more than 4000 camels and 1000 men now employed in transporting the supplies, and bring from the interior the rich cargoes of agricultural products.

In addition to the thirty trucks there is equipment for two complete machine shops, including lathes, drill presses and all tools and machinery required to equip a modern up-to-date machine shop and service station. One of these service stations will be located at Kulja and the other at Tientsin.

At intervals of about every 200 miles across the desert, stations will be maintained for supplying water, fuel, lubricants and for making ordinary repairs. It is estimated that it will require not less than thirty days to make the round trip of 4000 miles from Kulja to Tientsin. The trucks will be driven by Chinese, under the direct supervision of O. Bringewatt, formerly employed in the Wichita factory, who accompanies the trucks to China, and who will superintend this transportation scheme.

"Build the Road to Carry the Load. Make the Highway Feed the Railway."—William C. Redfield, Secretary of Commerce. To a state of the state of the



Clark Internal Gear Axles and Clark Disc Steel Wheels have great structural strength—no weak points—no defects.

Built with care—skill—accuracy.
They make for long truck life—wear
—service—for operating economy.



Clark Equipment is found only on good motor trucks

CLARK EQUIPMENT COMPANY BUCHANAN — MICHIGAN

The Demonstrator: An Asset or a Liability?

HE demonstrator as a good will producing asset for a manufacturer or distributor can scarcely be over-rated. Unfortunately a great many men who are sent out demonstrating are perfectly satisfied to be demonstrators and nothing else. They are not enough interested in building up the business to take pains to seek to develop sales and to make friends for the future.

If a demonstrator is following a salesman who does not care how much he promises, just so long as he gets a chance to demonstrate, that demonstrator has in his hands the opportunity to make or break the reputation of the house he represents. The demonstrator who allows himself to talk against the salesman, will cause suspicions to arise in the prospect's mind. The demonstrator who goes ahead blindly and tries to accomplish the impossible, as laid out for him by a heedless salesman, also gets the house in wrong.

The demonstrator has a mighty responsible position, and he should realize it fully. He must correct wrong impressions caused by mistaken salesmen, without allowing the prospect to think that the salesman is dishonest. He must put over the demonstration as if it were what the prospect had a right to ask. He must do the very best possible without trying to overdo it.

Where there is competitive demonstration, especially as it may occur at fairs or tractor events, it sometimes happens that anxiety to win gets the better of the demonstrator's principles. In one case that recently came under my notice-a rival tried to arrange with an oil dealer to put emery into the oil to be used by a competitor. This act, when it came to the attention of the man higher up, of course resulted in the prompt discharge of the offender. The manager of the offending tractor demonstrator said, "We won't stand for any of that stuff. You've got us beat yet on a gasoline tractor, but we're going to show you one, one of these days; and we're going to do it fairly, for we'd rather have you win today than win ourselves unfairly."

There ought to be, and there usually is, just that fair minded sportsmanlike attitude in competitive demonstration.

Demonstrators Make Good

A truck demonstrator told me this experience the other day:

"I had to demonstrate a one-ton truck for a hardware man. He took me to the railway yards and said he wanted to bring back a little jag of coal. After shoveling for a while, I asked him about how much he thought he had on. 'Oh, two or three hundred,' he said. 'Well,' I told him, 'if you haven't been putting on more than a couple of pounds to the scoopful, I'll eat it all. You've got about six or seven hundred on there.'

"Then he said he had some lime he wanted to take over, and he backed me up to the freight house, and when he had loaded lime for a while in bags, I asked him how much he had on the truck altogether. 'About sixteen or eighteen hundred,' said he. 'You've got nearer twenty-eight hundred,' I told him. 'We'll weigh it,' he said.

"The scales were in a hard place to get to with a big overload, but we drove on through the sand and I had thirtyeight hundred aboard. He didn't say anything, but I started to take the load to his store. I got it there and he had me drive in an alley so narrow that the hubs almost hit. Then he stopped me in front of a door and told me to back up to it. I couldn't do that, and I told him it couldn't be done. So he said, back her out and we'll unload around at the back door. I backed out, and it was some trick, too. Then he said. 'I guess we can't get to that back door the other way. We'll have to back in the way we just came out and back right on through.' I didn't say anything, but I backed her clear in and up to the back door. Then he said, 'I believe after all I'll put this stuff all in through the front cellar window.' 'Now, look here,' I said, 'I don't care where you put this stuff, but you make up your mind where you want it and I'll put it there. Do you think I'm crazy?'

"At that he laughed, and said, 'You've done well enough. I've got to admit that I was trying you out. Four other men have gone to the railroad with me after this load, but you're the only one who's brought it back.' That man bought a truck then and since that he has bought ten more. I knew what my truck would do. Of course he was asking altogether too much, but I played it carefully and didn't make any kick until he got so far, and then I merely showed him that I was on to his game."

That was a prospect who was asking the limit—and getting it. In reality he had no right to ask so much, but in getting all he asked, up to a reasonable, and even up to an unreasonable extent, he was sold on the proposition. The matter of willingness and fair mindedness all counts in the demonstration of trucks and tractors.

One prospect asked a truck demonstrator to back down a bank into a small stream. The driver did not know how he would get out, but he saw no chance of any danger in the act, and he took the request seriously and backed in. In order to get out he had to put chains on under the water, but he did it all so good naturedly and in the end pulled out of the stream so neatly that he impressed the prospect. It is not the work of the truck only that the prospect notes. He is influenced by the actions of the demonstrator. He is buying something that will call for a good deal of atten-

tion later from the distributor and if his demonstrator is the kind to make the prospect feel that the company is willing and fair minded, and even generous, he favors that truck over another which may even show a little mechanical advantage, but which is sold by a concern that does not appear in so good a light.

As a rule the demonstrator does not pay much attention to finding or developing prospects. He is more concerned with giving demonstrations for the men to whom he is sent.

Here is how one live demonstrator, with the interests of his concern at heart, made a friend for the line:

The demonstrator was taking his truck along a country road late one day when he saw a farmer and his two helpers unloading a hay wagon in front of a barn. They had a horse on the horse fork and the horse looked tired.

The demonstrator stopped with his truck and said: "Unhitch the horse and I'll put that load in for you."

The farmer laughed and exclaimed: "You can't handle a hay fork with that buzz wagon."

The demonstrator insisted and the farmer finally gave in. "All right, try her out. I'm ready to be shown." So they took off the horse and put on the truck. The farm hands tried the first time to overload the fork so the truck would not be able to start it, but the whole fork load, about half of the hay on the rigging, went up at one time and into the mow.

The next time, in their anxiety to stick the demonstrator, the men even got the hay rigging hooked into the fork, but that made no difference. The whole thing went up. After getting the rigging back into place, the rest of the hay was put into the mow. The farmer asked, "How big a hurry are you in?"

"No hurry," said the demonstrator. "If you've got more to go in, I'll wait." So he waited while they hauled in three more loads, which he put into the mow in record time.

"Come on in and have supper," he was asked, after he had refused any pay for his work. He said he had had his supper and he was urged to stop for the night, but he had to decline.

"Well," said the farmer, "all right then. I don't want to buy any truck, but you can bet I'll remember you folks when I need anything in farm machinery.

There was a friend made who could be counted on to boost the game for the house behind that truck demonstrator. Perhaps that demonstrator got nothing for that extra work. Perhaps the house never heard of it, but it is a safe bet that a man who would do that sort of thing once would do similar things and go out of his way to do them time and time again.

Every day a demonstrator can find opportunities to help his house in ways a little outside of actual demonstrating, and if he is the sort to say, "I wasn't hired to do that," he is the sort who will pass up all those extra jobs and someone will be promoted over his head when promotions are passed down the line.



balanced oversize

Note the Underscoring of the Word "Balanced" in the Above Headline

7 HY do we EMPHASIZE this feature? The answer to this question covers the BIG reason -the convincingly LOGICAL reason-why Master Trucks are the BEST trucks to BUY and the BEST trucks to sell.

"Oversize" in truck construction is a GOOD thing; but "BALANCED Oversize" is BETTER—the limit of excellence—the ultimate merit that has been brought to 100 per cent efficiency in MASTER TRUCKS.

In the MASTER TRUCK all the "oversize" parts work together in perfect harmony—because they are perfectly "BALANCED"—undue strains are eliminated—long wearing SERVICE is the result.

"BALANCED Oversize" Master Trucks are good trucks to tie to—the sort you should sell—PERMANENT profit-makers for you and your customers.

Six sizes—eleven models—1½ to 6 tons.

Your territory may still be open. It will pay you to write us

MASTER TRUCKS, Inc.

3132-3138 S. Wabash Ave.

Chicago, Illinois





Master of the Load On Any Road

The Truck Finding Its Own

By WILLIAM DARWIN FELLOWS

HE layman, has, no doubt, noticed how the motor truck is getting into the street photographs, the artists' drawings of countryside scenes, the copy of advertisers. The truth is, it can scarcely be left out any more than barns can be left out of a typical rural picture.

And yet it doesn't seem so very long since the motor truck was rather experimental than anything else. It might do well enough for short hauls, people said, but how can such a slow-moving vehicle—one with such high initial cost and so much strain on upkeep funds—ever prove its worth for long hauls?

That question made many a merchant subdue his enthusiasm and stick conservatively by his father's methods of transportation.

There is a little bridge across a temperamental stream in Kentucky, which was built in the "suspension" period. It had been good enough for two generations. But three years ago it was being torn down and replaced by a modern structure. The engineer in charge said, "The trucks have done it. The railroads are getting too slow and all this country around here, for fifty miles, is depending upon trucks. That means we have to build the bridges to fit'm."

Fifty miles-what a long haul!

And then came the war, freight congestion, embargoes, the urge of terrible necessity. The trucks were loaded up and raced for destinations hundreds of miles away. They ran over roads good and bad, in sunshine and in snow storms, when floods lapped at the macadam and mountain sides, loosened by frost, threatened to bury highways so deep it wouldn't pay to dig the stuff away.

We decline to quote official figures on what the trucks accomplished, because the imagination balks in their presence. But they did do so much that towns, which used to weep over poor railroad facilities, now complacently offer factory sites "on the main highway." The trucks have met the problem.

It is perhaps fitting that Detroit, home of the motor truck, should designate a Motor Transport Day (May 19) to show what it has done by way of carrying goods by truck, what can be done in this line, and what surely will be done as motor transportation develops.

These vehicles made good during the war. They are going to make good—beyond our ability to calculate now—when the industry of peace gets into third speed.

When the oceans were new to mankind, Columbus conceived a hare-brained notion that he could sail them. People laughed at him. The thing was too much an innovation to be believed in. Now we find steamships plowing the Atlantic and the Pacific, and the ship's captain has to keep a sharp weather eye peeled lest he stave into another vessel.

When Jules Verne wrote his "Twenty Thousand Leagues Under the Sea," people did not regard it to be anything more than a wonderful dream. We haven't as many of these undersea craft just now as we had several months ago; they happened just the same.

The bicycle never could be a practical thing, for nobody could ride a wheel without a third wheel to keep the vehicle balanced. Only a few years since, the airship could never be a going thing, because there could not possibly be any way to steer it; it was heavier than air, too. The scientists claimed it could not navigate the ozone, and they proved it. Some years before that no such machine as a contraption that could say words was possible. Scientists said it.

Scientists are all right—sometimes. Sometimes, too, they are all wrong. They and we have lived to see that they often

get off their trolley.

Lots of good things that we have nowadays, were once pronounced to be impossible. The men who did not know science shoved ahead and did the thing, because they didn't know it was impossible.

When James Watt brought out the power of steam some people laughed at him and said that he could not expect to imprison it in a small cylinder and move a heavy load. The small cylinder would burst first. Then came the railroads and did good business and all they did was to imprison that same steam in a little two by twice cylinder. Then came this demoralizing war and put the railroads on the blink. And then came the truck and revised the entire fabric of transportation.

We are living in a new age these days. Everybody does in his time. And everybody belittles new methods at first. They are too new, too unheard of, too unbelievable.

Time was when farmers threshed their grains by the slow process of the flail. Next, the horsepower thresher was offered them and then came the steam-power separator, which many farmers would not have on their place for fear it might set fire to barns. It is safe now. The man with a horsepower separator makes no money some more.

Night necessity and man's daylight wakefulness have changed these things. The minute you show a man you can save him time, labor, and make him more money of the realm, he will sit up and listen.

Transportation is a big thing, for there's no sense in selling a man a bill of goods unless they can be delivered. He wants them to arrive safe and sound, too. He also wants them when he wants them.

The railroads never could run to every town on the map; we had to ship the goods to the nearest destination to that consignee; then they sometimes had to

be carted miles to him by the slow team route. It suggested breakages, spoilage, and all such. It meant delays.

The truck can go almost anywhere. It rides easily. It gets there quickly. It doesn't cost so much as the railroads to run. It will take our stuffs to a man's door. He will get his goods in far less time than the railroad could fetch them.

Phoebus Apollo is peeping over the eastern hills and written across his face is the news, "I send your goods by truck route; they will reach you almost as soon I do."

Commended for Good Work

The Union Switch & Signal Co., of Swissvale, Pa., which has been doing a considerable amount of government work, has recently received a tribute from the Chief of Engine Production, U. S. Army, of which the company is justly proud. The report states that "the nine-cylinder rotary aircraft engine built by the Union Switch & Signal Company was the best rotary engine ever built." All the forgings used in this engine were of high grade nickel steel made in the company's own shops.

Make no mistake, the motor truck MUST become universal, if for no other reason than that the soldier boys are back with us again. Four million boys will make four million business men of one kind or another. Their disposition and temperaments have speeded up. Put your hand on a soldier's pulse and you'll discover that there's a smart tap-tap to it that wasn't there before. Most of them know about trucks because they have seen them in action. When Uncle Sam was delivering his fighting goods, he didn't leave it to horses and mules, although here and there the old regime bobbed up its slow-going head. If a business is to live it must keep pace with the spirit of a people and the urge of the new generation. This old world hasn't time to stop and hitch up a horse. It wants you to be half on your way by the third minute from actually starting.

"I don't need trucks," said a big farmer the other day, "I have two Interurban lines running not far from my place, to say nothing of the railroad." You might just as well say that you can lick every man in town because you once thrashed a hired man on your place. The way to beat any game and keep beating it, is to try out new opportunities. A friend of mine insisted on buying a certain make of seventy dollar tire. After a while I persuaded him to experiment with one that costs only thirty-five—and he's getting better mileage.

Oneida Truck Does Switch Engine's Work—A Model B 1½-ton Oneida truck is used at the plant of the Oneida Motor Truck Co. in Green Bay, Wis., to switch daily shipments of Oneidas from the factory tracks to the spur tracks and vice versa. The 40-foot cars in which the trucks leave the factory weigh from 40,000 to 45,000 lb.



ITY Departments demand fast, dependable service of all emergency apparatus.

Sudden side-wise lurches and heavy pounding that ordinarily play havor with frame, axles, and springs are completely taken up and eliminated when the heavy apparatus rolls on 'NOBBY CORD' PNEUMATICS.

Rows of deep-set, ground-gripping "nobs" afford a shorter turning radius—prevent skidding—and add the necessary vitality and ruggedness to the most popular tire on the market—'NOBBY CORD.'

United States Tires are Good Tires



Metal and Rubber Markets

Firm Undertone in Steel Market Throughout the Country

The situation in the steel market is reported as eminently satisfactory. Mill operations have been on the increase in almost all the large producing centers, and the general result has been very heartening to manufacturers.

In wages there has been no move as yet to bring about lower levels. Employers are more disposed to meet the demands of the laborers, now that there has come an improvement in buying.

There is considerable activity reported in the export situation for steel products. Japan and South America lead in the ordering thus far.

The American Chamber of Commerce in London reports that the question of American competition in the British steel trade has now found its way into Parliament in the form of a direct question on the point, put to Sir Auckland Geddes, president of the Board of Trade.

In reply to a member of the House of Commons who stated that steel imported from America was selling at £4. 10s. (about \$22) a ton less than British manufactured steel, and who asked what steps the government was taking to meet that condition. Sir Auckland Geddes admitted that he knew the condition to exist, although not to what extent, but that the British Government was not prepared at the time to impose any restrictions on iron and steel, in view of the demand for it in great Britain. He implied that, despite the unfavorable position, iron and steel were essentially necessary for manufacture of articles for British export trade, even if that iron and steel had to be imported from America.

Steel Products Prices

Per ton, Pittsburgh-	
Bessemer billets\$38 50 a	
Open hearth 38 50 a	
Forging billets 51 00 a	
Sheet bars 42 00 a	
01 1-	
Sheets	

The following prices are for 100-bundle lots and over f.o.b. mill:

Blue Annealed Sheets-				
Pittsburgh	\$3	55	a	
Philadelphia	3	79	a	
Chicago	3	82	a	
Galvanized Sheets of Black Sh	eet	G	au	ge-
Pittsburgh	\$5	70	a	
Chicago	5	97	a	
Tin-Mill Black Plate-				
Pittsburgh	\$4	35	a	****

Tin Plate

Tin	pl	ate,	p	me	. per	base	box	\$7	00	a		
Teri	ne	plat	e,	I.	C			7	05	a		×

Iron and Steel at Pittsburgh

Bessemer iron\$29	35	a	
Bessemer steel, f.o.b. Pittsburgh 38	50	a	
Skelp, grooved, steel 2	45	a	
Skelp, sheared, steel 2	65	a	
Ferromanganese (70 per cent.).125	00	a	
Steel, melting scrap 15	50	a	
Steel bars 2	35	a	

Other Metal Products

Copper: There has been a much stronger tone to the copper market recently.

Quotations range around 18 to 18.25 cents per 1b. for June and July and 18.25 to 18.50 cents for August.

Aluminum: There is a fair demand reported for this metal, 98 to 99 per cent, ingots being quoted at 33 cents per lb.

Tungsten: The proposed tariff is said to have influenced certain buyers to urge the immediate shipments of ores contracted for future shipment from abroad, and others have purchased spot ore to be protected in any case. The market, however, has again been almost entirely for off grade ore, which was sold at prices ranging from \$7 to \$7.25, while high grade scheelite and high grade wolf-ramite have been neglected. The holders of this high grade ore, however, are by no means discouraged and are unwilling sellers even at \$10 a unit.

The following prices are current on brass and bronze items:

Copper sheets, hot rolled	25	50 a
Copper sheets, cold rolled	26	50 a
Copper bottoms	33	25 a
Seamless tubing, bronze	31	50 a
Cut lead sheets	8	50 a
Copper rods		
Copper wire	20	25 a 20 75
High brass wire	20	75 a
High brass sheets	20	75 a
High brass rods	19	25 a
Low brass sheets	20	25 a
Low brass wire	20	25 a
Low brass rods	22	75 a
Brazed tubing, brass	31	75 a
Brazed tubing, bronze	36	00 a
Seamless tubing, brass	29	00 a
Seamless tubing, copper	30	00 a

Prices of Old Metals

Copper and composition are in fair demand. A decline is reported in block tin scrap. Current prices follow:

Aluminum—	Buyi	ng.	Sel	ling.
Cast scrap	201/2	a21	221/2	a231/2
Sheet scrap	21	a221/2	23	a24
Clippings	23	a23½	25 1/2	a26 1/2
Heavy machinery comp	14	a14½	15	a151/2
Heavy and wire	131/2	a14	15	a151/4
Light and bottoms	12	a12½	13	a131/2
Heavy, cut and crucible.	141/2	a15	161/4	a1634
Brass, heavy	8	a 8½	9	a 91/2
Brass, casting	10	a101/2	11	a111/2
Brass, light	7	a 7½	81/4	a 81/2
No. 1 clean brass turn'gs	7	a 8	81/	a 9
No. 1 comp. turnings	12	a121/2	13	a1334
Lead, heavy	41/4	a 4%	43/	a 5
Zinc scrap	41/4	a 41/2	43/	a 5
Block tin, scrap	55	a58	60	a62

Rubber Market Quiet

With heavy supplies of all grades on hand it is difficult to interest consumers, especially as most of them are already well stocked up. The market remains steady, sellers showing no inclination to force it, except for plantation grades, which have advanced recently.

Para-Up-river, fine, per lb	a	551/2
Up-river, coarse	321/2a	33
Island, fine	471/2a	
Island, coarse	211/2a	22
Caucho, ball, upper	33 1/2 a	
Caucho, ball, lower	a	
Cameta	211/2a	22
Plantation-First latex pale crepe	41 a	
Brown, crepe, thin, clean	35 a	36
Smoked, ribbed sheets	40 a.	

Centrals-Corinto	35	a 37
Esmeralda	35	a 37
Guayule, wet	25	a
Guayule, washed and dried		a
Balata, block, Ciudad		a 75
Balata, block, Panama	55	a. 60
Balata, sheet*1	0.0	a
Mexican—Scrap	39	a
Slab		a
African—Massai, red		a
* Nominal.		
Scrap Rubber		
Tires—Automobile	31	42

Truck on Poor Road Uses Seven Times as Much Gas as on Good Road

Bicycles, pneumatic

Aside from the economic value—including lowering of food prices, enhancing of property values, bringing the farmer closer to the city, and to his neighbor, and stretching the business radius of towns and cities—the building and maintenance of good roads could be more than financed by the saving to the operators of automobiles and trucks, declares the B. F. Goodrich Rubber Co.

A test conducted in Ohio recently to determine the saving in gasoline from running over a good road as compared with gas consumption over bad, medium grade roads, disclosed a surprising difference. Five new army standard "A" trucks with seven different types of road service, showed a gain of six miles per gallon of fuel between the best and worst types of roads. All the trucks were empty during the test. The trucks loaded showed that the poor road took seven times as much gasoline per mile as the good one.

The test results showed an average of 5.78 miles per gal. over a dirt road in good condition, 7.19 over fair gravel, 9.39 over good gravel, about the same over fair bituminous macadam and good brick roads, 11.44 over extra smooth brick and 11.78 over good concrete.

The saving to the motoring public in gasoline alone would amount to millions of dollars annually. Perhaps equal to this would be the saving in tires, which is considered as important an item of car upkeep as is gasoline. Calculating the saving in wear and tear on the mechanism of cars and trucks and also the time lost by poor roads, adequate highways are undoubtedly a sane investment.

In a community where there are little branch railroads and lots of interurban electric lines, there is no need for you to assume that a fleet of trucks is not welcome. There's plenty of work for them to do-but you won't find it out until they are there, ready to tackle what's waiting for them. I know a chap with a fleet of seven-and he's at his busiest when the interurban lines are slowing down to a car an hour, between four and six in the morning. Folks are finding out by degrees, that the shortest distance between two points-is a motor truck. And the best of it is, there's no business bully shakin' his fist in your face every minute.



Next Time BUY FISK

FISK TRUCK TIRES

How the Selling of Motor Trucks Must be Handled in the Future

By J. A. DOORIS

In this day and age when the motor truck has become such an important factor in modern business, it is becoming more and more apparent that we must change our present system of truck selling. All business firms are waking up to the fact that they can no longer ignore the question of trucks. The selection of the right truck is the stumbling block.

The trade is confronted with the fact that it lacks properly trained salesmen, men who can meet the prospective buyer and rightly diagnose his requirements. There is no lack of salesmen who have what is termed the closing ability. It is high time, therefore, that someone does something that will provide a corps of properly trained truck salesmen.

Our present salesmen are sadly deficient in the practical end of the truck business. Their knowledge is a mere smattering. Usually these men have no thought beyond the swelling of their commissions. Not what a firm needs, but how much of an order they can unload on them is their chief interest. Such tactics are bad for the dealer. The average salesmen are out to sell and if they can't sell one truck they will sell what the firm wants to buy. Service is the last thing such men think about. All salesmen are not of this type, but there are too many that are. They are incapable of solving a firm's problems, because their knowledge on the whole subject is superficial. They do not study the trade journals enough to keep up on the subject. At best they merely parrot the talk of the sales manager, who is supposed to have some insight into the business. They get by some how with flights of oratory and imagination. Ask any of them a searching technical question and he is thrown completely off his base. Many salesmen who consider themselves pretty well up on the subject of trucks, are stumped by such simple questions as the actual carrying capacity of their truck under varying conditions, how they arrive at their figures of the cost per ton mile, etc.

New Type of Salesman Needed

One of two things must be done; either our present force of truck salesmen must take a course in the technical branches of the business or else give way to a new type of salesmen, men who are engineering experts and can explain their ideas to other people. The time may not be far off when truck salesmen will be graded in accordance to their standing as efficiency experts. It may be that the head salesman of an organization will be selected largely on how well he qualifies as a technical expert. It may even develop that graduates from some technical school will fill the need for this

new type of salesmen. Not particularly good talkers are required, but men who, in addition to their fund of knowledge, can express themselves clearly and forc-

Truck dealers and manufacturers know perfectly well that the present system of selling is wrong, but they are compelled to do the best they can with the material that they can procure. They could not figure out any other method; so they have floundered along. Keen, bright men from practically all lines of the trade have been lured into the truck field. Some few have made good, but many of them have failed, for the reason that they thought only of how big an order they could put over. The trucks which they sold, though they may have been ever so good, were likely to be unsuited for the work that they were intended to do. Many a big sale of a fleet of trucks has fizzled out, after the initial order, and all because the trucks failed to meet the requirements. Glib mechanics have been tried with no better

Problem Must be Approached From a New Angle

What is needed are all around well trained men who are able to explain their ideas logically. Some firms may argue that the best plan is to coach the salesmen until they are thoroughly grounded in technical knowledge. This system has produced a few high class truck salesmen. Others argue that it is far better to train certain of their expert mechanics in the art of selling trucks. This plan will no doubt work in some cases, but both ideas are based on the present system of selling. We must get away from the present plan and approach the problem from a different angle. With no intention of casting any reflection on the ability of the present truck salesman, we are forced to admit that the days of this type of truck salesman are numbered.

A new order of things must come. What this will be no one can accurately say. It is safe to hazard the statement that in the future the keen talkers will be relegated to second in command. Digging up prospects might possibly express their future office. They may get just as big a salary as they do at present, but their ability to gum up the business will be curtailed. Their duties will be mostly to work up a prospect to a certain point and then turn him over to the technical force. These experts will be brought into the closing of the transaction, very much as a doctor would bring in a diagnostician for a consultation. Their duties will be to go into the problems entering into the case and to decide just what trucks are required and

how many or how few. It may develop that some such plan as that in vogue in baseball circles may work out the best. It is a common practice of managers of the big league nines to have a few star players in each nine for the purpose of pulling the rest of the team up to a higher pitch of efficiency.

Does all this strike you as absurd, or out of reason? Stop and think a moment. This is an age of specialists, and men are paid for what they know. Then why is not this plan a logical solution of the question? It is but following the lines of other successful leaders. Mere cramming a salesman with data, which he learns from outlines furnished by the sales manager and recites parrot fashion. will never impress a prospective purchaser. The real experts must be thoroughly grounded in the matter. It is the only way we can ever hope to see the present crude system changed and brought up to the present standard of modern business. The sooner it is done the better. Because some salesmen had no practical information regarding trucks many a firm has been led into squandering thousands of dollars on the wrong truck. There is no need to name all the mistakes that have been made. In a general way we know that some trucks are too large or cumbersome and others are too light for the work they must perform.

Overzealous Salesmanship

Then there is the fallacy of selling a firm a touring car chassis, with or without an extension and leading them to believe that they can haul all the load that can be piled on the body. No doubt the car will travel with a two-ton load, but the strain will soon land it in the junk pile. All of which can be traced to some salesman who had no other thought than the number of sales he could make. The blame can be placed only on the system which gives the average salesman too much authority. Little or no restriction is placed over him so long as he makes good selling his line. There are some sales managers who try to offset the overzealous salesmen, but the heads of the firm are short sighted and do not realize the harm that such tactics produce. The harm does not stop with the disappointed purchaser, but is widespread. Many heads of firms are quietly watching the performance of different trucks and when they see some truck fail to hold up, it is almost as good as a knockout blow for that particular truck. Such experiences are the main causes for a large per cent. of the apathy of business men. The truck may have been perfect in construction, and the sad experience was wholly due to overzealous salesmanship. The salesmen were in no wise





Every batch of Hoover balls is subjected to compression and deformation tests. The Hoover research and control laboratories are provided with the most elaborate equipment to insure maintenance of Hoover highest quality.

Scientific Research by the Hoover Laboratories

Working steel into perfect spheres to .0001 inch calls for precision in every operation.

To make a lot of % inch steel balls today so that they will not vary more than .0001 inch with another lot next month, is truly a scientific accomplishment, both in the preparation of the materials used and the production methods.

To do a certain thing scientifically means to permit of no guesswork. Each step, from start to finish, must be taken with accuracy. The procedure must be made with definiteness.

In the great Hoover plant there have been developed research and control laboratories such as are not found in any other ball plant in the country.

Such extreme measures are bound to carry the name Hoover far and beyond its present farreaching scope.

One of the functions of the Hoover laboratories is to test for defects in raw steel—such as decarbonization, laps or seams. Close co-operation between the Hoover Steel Ball Company and the steel mills has done much to perfect raw steel for ball-making purposes. But in order that the high quality of Hoover Steel Balls be guarded and made certain, no effort is spared.

All Hoover balls are made from the same kind of steel—a special chrome alloy. All stock is subjected to the same special heat treatment.

Automatic hardening furnaces insure uniformity of hardness. Automatic grinding and gauging insure uniform finish and size.

This is the largest steel ball plant in the United States, making it possible for us to meet all shipping specifications.

Hoover Steel Ball Company
Ann Arbor Michigan

HOOVED STEEL BALLS fakirs, but they simply did not have the proper grasp of the many angles of the truck problems.

Another popular delusion shared alike by salesmen and business men, is that of thinking that because the passenger car which they drive happens to be good; it stands to reason that a truck which is made by the same factory will be equally as satisfactory. It may in some cases prove to be the right truck for the firm's business. It is easy money for the salesman who makes a quick sale by agreeing with the customer. Here again is a case where the expert is needed to decide whether it is a sound investment or whether it would be throwing away money to purchase it. Every day firms are squandering good money on the wrong truck from a false sense of economy. Take the subject of extensions, for instance; some firms find them ideal in their particular line of work. But this does not prove that they can be universally used as a truck substitute. If such were the case, it would be foolish to continue to build any more trucks. It illustrates the point vividly, for all of us have seen firms try to make these trucks do the impossible.

With properly trained experts to aid buyers in settling the problems which enter into the question of selecting the right truck, the business will boom as it never has done. The future success of the business demands it.

Helpful Hints for Truck Operators in Hot Weather

By ALFRED F. MASURY, Chief Engineer, International Motor Company, Manufacturers of Mack Trucks

First of all, it is necessary to understand the cooling system. Do not expect the truck to labor in low gear up long grades or through deep sand, perhaps with a trailer, and still keep cool if carbon is permitted to accumulate in the cylinders, if insufficient water is put in the radiator, if the oil level is low or the oil is of the wrong kind.

At the beginning of the season it is

ordinarily necessary to change the carburetor adjustment, that in summer being a trifle leaner than that for winter. Overheating is sure to result if the carburetor is improperly adjusted.

Timing has an important bearing on cooling. In hot climates where temperatures are excessive for a considerable part of the year, the engine may be made to run cooler, but at a slight sacrifice of power, by setting the camshaft one tooth ahead (earlier) on the timing gears, so that the exhaust valves open earlier. A weak spark has the same effect as late spark timing, and overheating results.

Difficult grades can be made with greater speed and less fuel in intermediate than if the engine is permitted to labor in high to the point of stalling. Contrary to popular supposition the engine will cool better if it is not obliged to labor excessively.

Keep the exhaust clear of obstructions and do not allow mud to cake on the outside of the muffler or to clog the outlet.

The radiator must be filled as full as possible. Do not allow the overflow pipe to become clogged, or flattened by a blow, or kink or slip down in the radiator.

Use only the best quality of rubber hose for water connections. The inside of cheap tubing is apt to dissolve and the rubber particles clog up the system. Go over hose connections in the spring, because some anti-freeze solutions have a deleterious effect upon the rubber. Also they have a scum inside the radiator which will not dissipate the heat. It must be cleaned out.

In filling the radiator only clean water should be used. Strain the water through a cloth where none but dirty water is available. Above all do not use buckets in which oil has been kept.

Keep the fan clean and well greased, so that it will turn freely.

Not all of the cooling of the engine is affected by water, but lubricating oil plays an important part, as it cools the bearings. Keep the crankcase clean; it cools the oil. It has been found that

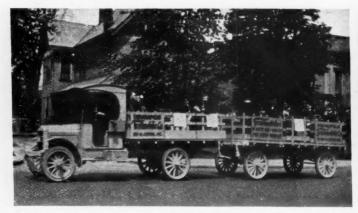
gasoline washes the lubricant from the cylinder walls, and a mixture of gasoline and oil runs into the crankcase, where in time it destroys the lubricating qualities of the oil. For this reason the oil in the crankcase should be drained and replaced with new oil every 1500 miles.

The average working temperature of oil in summer is higher than in winter, and so oil of the same body will be thinner. Sometimes it is advisable to use a grade heavier oil in summer. When a heavier oil is used care should be taken not to work the engine too hard before it is warmed up.

University of Michigan Outlines Motor Transport Course

ANN ARBOR, June 21.—The syllabus of the motor transportation course offered at the University of Michigan has been announced as follows:

- 1. Early history of transportation.
- 2. Origin and growth of railroads.
- 3. Water transportation in the United States.
- 4. History of American highways.
- 5. Highways location.
- 6. Fundamental principles of construction of highways.
- 7. Adoption of type of construction.
- 8. Economic considerations in highway construction.
- 9. The use of highways.
- 10. Development of motor transporta-
- 11. Statistics and present day importance of highways motor transportation.
- 12. Motor transportation and good roads development. (a) in the pleasure car field; (b) in the commercial car field; (c) in the war; (d) auxiliary to railroad and water transportation.
- 13. Types of motor transportation. (a) for the city; (b) for rural districts; (c) parcels post; (d) war and peace convoys.
- 14. Economics of motor transportation. (a) type of haul and loads; (b) length of hauls; (c) return loads; (d) operating; (e) terminal and load transfer facilities.
 - 15. Legislation for highways transport.





"Ship-by-Truck" Day Parade Fostered by Firestone Company, in Indianapolis

Recently a motor truck parade was held in the city of Indianapolis, under the auspices of the Firestone Tire & Rubber Company, for the purpose of demonstrating to the merchants of Indianapolis the possibilities of motor truck transportation. L. R. Jackson, manager of the local branch of the Firestone Tire & Rubber Company, Indianapolis, was the man who put over the parade. He is seen in the center of the group. Others who helped to manage the details for this affair consist of C. P. Firestone, F. J. Pulsford, C. I. Barnes and G. H. Belt. The Firestone Company has recently opened "Ship-by-Truck" Bureaus in a number of the larger cities throughout the country, where it is prepared to give the shipping public definite and reliable information about motor truck routes, schedules, companies operating, capacity of trucks in service, rates, comparative cost, etc.

The Resiliency is Built in the Wheel



Bad Pavement

Cushion

Birmingham, Ala.

Baltimore, Md.

Boston, Mass. Buffalo, N. Y.

Chicago, Ill.

Cincinnati, Ohio

Columbus, Ohio

Denver, Colo.

Chicago, Ill., Fire Apparatus Equipped with Sewell Wheels



Ford Motor Company Trucks Are Equipped with Sewell Wheels



Sewell Wheels Are on

Carry Their Own Roadbed With Them

Eleven years ago we began work upon a scientific principle. Eleven years ago we decided that the all-essential Resiliency that preserves the delicate mechanism of the Truck must be Built into the Wheel of the Truck.

We discovered eleven years ago that this Resiliency, to be safe, permanent and economical, must be developed, not in the tires or the springs, but in the rim of the wheel, to absorb the shock at the base or starting-point, checking the vibration before it passes through the delicate mechanism of the truck.

Therefore, eleven years ago we became Wheel Engineers. Today we design and manufacture Truck Wheels with the same scientific precision that motors and axles are designed and manufactured; because the economy and efficiency of motors and axles, we find, are determined by the Resiliency which we build into the Wheel.

The achievement of these eleven years of engineering effort and scientific manufacture is the Sewell Cushion Wheel of today—a wheel that actually carries its own roadbed with it-a Wheel of Rubber within a Wheel-a wheel that eliminates the costly wear of tires—a Wheel that eliminates wear because it eliminates friction—a Wheel that is built to last for years—a Wheel that has been nationally accepted as a sound assurance of economical truck operation.

The proof that these eleven years of scientific development have been recognized is found in these few striking facts: 850 of the largest firms in the country operating trucks have re-ordered Sewell Wheels: In 135 American cities Sewell Wheels are in operation: On July first 27,000 Sewell Wheels were in use.

Can we offer more conclusive proof that our eleven years of effort have been repaid; that Industry and Science have recognized the soundness of the Sewell Principle?

"The Resiliency is Built in the Wheel"

THE SEWELL CUSHION WHEEL COMPANY, DETROIT, U.S.A.

Branches:

Indianapolis, Ind. Clarksburg, W. Va. Cleveland, Ohio Kansas City, Mo. Louisville, Ky. Minneapolis, Minn. Newark, N. J.

New York, N.Y. Philadelphia, Pa. Pittsburgh, Pa. Rochester, N.Y.

Springfield, Mass. St. Louis, Mo. Tampa, Fla. Washington, D.C.

N. A. C. C. Truck Standards Committee Recommends Changes

At the recent meeting of the Truck Standards Committee of the National Automobile Chamber of Commerce, the question of the relation of body weight to the size of the truck chassis was discussed. The importance of impressing upon the retail salesman the desirability of selling the truck body and of definitely determining its size and probable weight and the weight of the material it will carry before he quotes chassis prices or furnishes chassis specifications, was stressed particularly.

It was recommended that standard demonstration charges be eliminated and that the following table be substituted for the present standard speed rating table:

Gross Weig Body and I	ht, C	hs t	L	8	is	i																		eed,
Pneumat)	t	0	,	2	8	,0)(0)	11	0.	,					25
Solid rul						-																		
4,000	1b.									٠	۰		0				0							25
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12,000	44			۰		٠						٠												18
16,000	66																							16
20,000	66																							15
24,000	66												٠							٠				15
26,000	46			,																				15
28 000	66																							15

The following table of Standard Body Weight Allowances for Motor Trucks was recommended for adoption.

Load, Tons	Body Weight Allowance, Pounds									
1 ton										
1½ ton										
2 ton	1500 lb.									
2½ ton										
3 ton	2000 lb.									
3½ ton										
4 ton										
5 ton and over	2500 lb									

It was further recommended that the N. A. C. C. communicate with the National Association of Motor Truck Sales Managers, and ask for their co-operation along these lines.

Do you know what happens when a fellow gets a becoming new suit? There's always a remark from the side lines: "Gee, Smith looks prosperous. He must be doing well." And it always works! Same thing about a truck. There's an uplift to them in business. They look mighty fine standing in front of a store or a factory or a farm-and they belong to the Twentieth Century on the road. And make no mistake-people notice them! What a new coat of paint, inside and out, does to a shop, an automobile does to your delivery system. It starts tongues wagging in the right direction. It leaves a favorable impression. Laggards still use horses and are always lazy at keeping delivery dates. Sleepy merchants and manufacturers do NOT have delivery trucks. A farmer friend of mine once said: "I'd rather economize on the inside of things, where nobody will notice-but not with transportation."

Proposed Standard Truck Service Policy of National Automobile Chamber of

Foreword

The exact text through which the manufacturer sets forth to the public his policy regarding Service should include the detail practices as well as the principles of the manufacturer's relations with the customer. The detail practices necessarily will vary with the individual policies of each manufacturer. For this reason it is not possible, or desirable, to standardize on a definite warranty which can be consistently adopted by all members of the Chamber. It has therefore been decided to offer the following recommendations of principles and detail practices, with the aid of which definite warranties and maintenance policies may be constructed by each member, according to his requirements.

Principles

(1) Manufacturers' Square Deal Warranty

Satisfactory relationship between manufacturer and user is contingent upon mutual good faith. All manufacturers should guarantee to make good all their just obligations expressed or implied, which will assure each and every user the maximum of truck service and at the minimum of consistent cost.

(2) Distributors' and Dealers' Responsibility

The best maintenance results can be obtained with the user through distributors and dealers representing the manufacturer. The distributors' and dealers' service obligations are:

- (a) To carry out the Manufacturers' Square Deal Warranty with the user.
- (b) To maintain adequate facilities for making repairs, adjustments, and do general overhauling in a prompt and competent manner at reasonable charges.
- (c) To thoroughly instruct the user in the proper care and operation of the truck.

(3) Users' Responsibility

The greatest responsibility for satisfactory truck service rests upon the user. The responsibility of proper operation and care are entirely beyond the control of the manufacturer and distributor. Upon the user carrying out consistently and intelligently the instructions on care and operation depends the success of truck service.

(4) Basis of Adjustment Decisions

Definite adjustment policies should be outlined which can be applied to all cases, rather than leaving the adjustment of individual cases to the judgment of individuals. This assures equal treatment to all, and avoids misunderstandings, imputations of favoritism, and a vast amount of argument.

Detail Practices. Manufacturer's Responsibility

Replacement of Defective Parts

(a) Within a definite period of time after delivery of a new truck to user, the manufacturer will furnish, free of charge at the factory or branch, duplicate parts to replace any parts that are returned to the factory or branch, with shipping charges prepaid, and which are determined by the company to have been defective in material or workmanship, or it will put such parts in condition as good as new without charge.

Repair Parts Service

- (b) Discounts to garages or repair shops will be subject to agreement between manufacturer and dealer.
- (c) The manufacturer reserves the right to dispose, within thirty days, all parts returned, without assuming liability, unless covered by shipping instruction or adjustment is accepted.
- (d) The manufacturer will refuse to consider claims for or accept for adjustment any parts not supplied by him.

Accessory Service

- (e) For service and replacements on engine starters, batteries, magnetos, generators, carburetors, tires, rims or other trade accessories that are not made by the manufacturer of the truck, application should be made direct to the nearest service station maintained by the maker of such accessory. While not assuming any direct responsibility for articles not made by them, the manufacturer, its branches or dealers, will do all possible to assure the user of a square deal from the maker of these parts or accessories. If, however, the accessory dealer is not adequately represented in a particular locality, the dealer therein is obligated to give the user proper service on such accessories.
- (f) Manufacturers shall provide dealers with a list of manufacturers of accessories used on their trucks and a list of service stations.

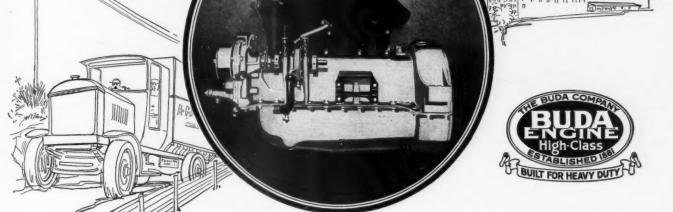
Distributors' and Dealers' Responsibility. Inspection and Adjustment

- (a) Trucks brought to service stations maintained by factory, branch or dealer will be inspected monthly without charge. The same service will be rendered at points outside of the service station at a regular charge based on the distance. Inspection includes examination and report of the condition of the truck.
- (b) Necessary adjustments will be made without charge during the first month after delivery of a new truck to user, provided the truck has not been tampered with nor injured by accident, abuse or neglect. After the first month adjustments will be made at the regular charges of the service station. Adjustment includes only such adjustments as inspection has found necessary to put the truck in good operating condition.
- (c) Every dealer is expected to give the same inspection and adjustment service on any truck made by the manufacturer without regard to the territory in which it was brought.

Repairs, Replacements, Etc.

- (d) All work not included in inspection and necessary adjustment or installation of replacements will be charged for at regular
- (e) When any charge work is to be done and the cost can be estimated in advance,

Buldan TRACTOR TRACTOR TRACTOR TO THE PARTY TO THE PARTY



The superior performance of Buda Engines is due to the proper blending of design and quality materials by painstaking workmen—time tried—who pride themselves on being a factor in "Buda's" success.

The Buda Booklet "Superior Engine Service" is mighty interesting to the man who wants truck or tractor power efficiency. Send 10c to cover postage.

The Buda Company
HARVEY (SUBSES) ILLINOIS

the user, upon request, will be advised of the approximate or maximum amount of the charges before the work is begun.

(f) When it is necessary, for the convenience of the user, to render service at a distance from the service station, the time spent by employes going to and from the service station, the time job will be charged for at the regular rates of the station, together with all proper expenses of making the trip, cost of shipping parts, if any, and other necessary incidental expenses.

Overtime Work

(g) Any overtime, holiday or Sunday work done upon the request of the user will be charged for at the regular overtime rate.

Instruction

(h) Personal driving and maintenance instructions will be given to all new truck users without charge. All other personal instructions will only be given in accordance with the agreement between the customer and the dealer at the time of purchase.

Repair Parts

- (i) The dealer will be required to maintain a minimum stock of both "current" and "service" parts as specified by manufacturer.
- (j) The dealer will be required to furnish an inventory of current and service parts upon request. The manufacturer reserves the right to send an auditor to verify inventories.
- (k) Stocks of parts shall be designated as follows:
 - Current Parts: All parts used in trucks of models being produced by the factory.
 - Service Parts: All parts for models no longer being produced by the factory and which have not been superseded by other parts that are interchangeable with them.
 - Obsolete Parts: Parts that have been superseded by other parts that are interchangeable with them.

Return of Parts

(1) Parts claimed defective must be returned to the factory with shipping charges prepaid, within ten days from date of replacement. The date when defect was discovered, manufacturer's number of the truck and owner's name and address must be given on a tag attached to part.

(m) Obsolete parts may be returned only by individual agreement with the manufac-

(n) Surplus parts may be returned only by individual arrangement with the manufacturer. All parts shipped to the manufacturer by dealer shall have transportation charges prepaid and be properly tagged.

User's Responsibility

The entire responsibility for five commonly neglected features of motor truck operation rests with the user. These are:

Lack of regular inspection.

Lack of intelligent lubrication.

Loose nuts and bolts.

Overloading.

Overspeeding.

It is impossible to over-emphasize the importance of these matters, which are beyond the control of the manufacturer and which the user must recognize to be in the nature of an obligation on his part deserving of the most careful consideration if successful operation is to be maintained.

The manufacturer provides an efficient machine, capable of successful operation for a period of years, but when the truck is installed the responsibility passes to the user, as in the case of any other practical utility which cannot be of infallible construction.

The manufacturer and dealer are interested in the most efficient and economical operation of the truck, but a full measure of co-operation is necessary on the part of the user, who should avail himself of all facilities provided by the service station.

Traffic Stages Unique Contest

A unique sales contest is being conducted by the Traffic Motor Truck Corporation. The contest, known as the Traffic Sales Flight, takes the form of a Trans-Atlantic air flight, following the route covered by the United States Navy airplanes recently from New York to Plymouth, via Halifax, St. Johns, Azores and Lisbon. The distance to be covered is one thousand points and an allotment, or quota, of trucks and dealer contracts counting so many points each, is apportioned to the Traffic salesmen throughout the United States.

A large chart of the airplane is kept in the sales office of the Traffic corporation, which takes the position of signal station. This chart shows diagram of flight with each salesman represented thereon by a small airplane. The airplanes are changed daily to show the various positions of the salesmen. Each salesman is furnished with miniature chart and planes in order that each may know daily the position of the others. Messages are exchanged daily during the flight between the signal station and the pilots. Failure on the part of a pilot to send messages daily, together with other misdemeanors, will cause them to be penalized a number of points.

The "hop off" from New York was made June 15 and the fleet complete is scheduled to arrive in Plymouth September 1, each salesman driving a nonstop Traffic plane.

Upon completion of the flight a banquet and frolic will be held in St. Louis for all those who participate, and suitable rewards will be made to those who circle Plymouth first.

Harry H. Hawke, general sales manager for the Traffic Motor Truck Corporation, is the promoter of this sales con-

Certain truck salesmen do too much talking about the LOOKS of a truck. You'll hear them say, in the salesroom:

"Ain't she purty?"

"That bright red body is a beaut!"

"Nicely finished, isn't she?"

"You can have it in royal blue, if you want."

"My, but she's a handsome brute on the road."

But it's been my experience that what counts in the long run is less beauty talk and more on service. I don't care how nice lookin' a saw is if the steel is poor. What's more, have you ever noticed what poor workers handsome fellors are?

Firestone Encouraging Shipby-Truck Movement

CINCINNATI, June 28.—Shipment of freight by automobile trucks as one means of reducing the high cost of food and adding dollars to the pockets of the producer was the subject of an address to Cincinnati truck manufacturers, dealers and salesmen by E. Farr, Chief of the Ship-by-Truck Bureau of the Firestone Tire and Rubber Company, Akron, Ohio, at a meeting here.

Mr. Farr was with the American Army in Mexico in connection with the movement of troops and supplies by trucks and later saw service with the American Expeditionary Forces in France.

The use of trucks for short-haul freight will bring the last bushel of food stuffs and grain to the market from the farmer, and will aid materially in reducing the present high cost of food, maintained Mr. Farr.

He added that the campaign was being encouraged by railroads, which have suffered frequent losses from short haul freight in recent years.

The purpose of the Firestone "Ship-by-Truck Bureau" was outlined by Mr. Farr for the information of the manufacturers and salesmen present. The bureau, Mr. Farr said, which will have branches in more than 100 principal cities in the United States, will collect and distribute data relative to shipment of freight by truck, which will be given gratuitously to dealers and operators who apply for it,

According to Mr. Farr, the bureau will investigate new routes, estimate the amount of tonnage which could be obtained over certain routes, and furnish other valuable information which will benefit both the operators of the routes, the manufacturer, and the producer. In addition, he pointed out, the consumer will have his produce delivered at the door, abolishing the cumbersome method of hauling to and from freight depot.

J. P. Patterson, manager of the Shipby-Truck branch in Cincinnati, was toastmaster, introducing Mr. Farr and making a brief address on the future of the new industry after Mr. Farr had finished.

An interesting suggestion of Mr. Farr's address was that Cincinnati should have a truck parade. He cited instances in Detroit and other cities where such parades have proved to be of interest. He also told of experimental trips undertaken by two trucks from the Firestone headquarters in Akron to Macon, Ga., to determine the feasibility of the ship-by-truck campaign. The trucks, he said, made the entire trip on schedule time, often going where farmers found it impossible to travel with horses and wagons over the so-called "aeroplane" roads of the South.

[&]quot;Roads are the tools of industry. Build them that industry may furnish employment for labor."—William C. Redfield, Secretary of Commerce.

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IN offering American manufacturers a scientific solution of their bearing difficulties, the first requisite is a unified organization to give the assistance and advice heretofore rendered solely by bearing producers as individuals.

The S K F Industries, Incorporated, is peculiarly fitted to undertake this needed service, since it represents the pooled experience of manufacturers whose activities in solving frictional problems have brought them in daily touch with every type of bearing.

Combined with these is the experience of a company whose energies have been devoted solely to steel ball manufacture—a phase of the industry no less important than the assembled bearing itself.

To those who know the organizations involved, this massing of experience and ability—further reinforced by bearing research—means advice with the impartiality of scientific effort and resources of practical knowledge not equalled by any other one organization.

American manufacturers are invited to avail themselves of this bearing service at any time.

S K F INDUSTRIES, INCORPORATED

Sales, Service and Research Division 165 Broadway, New York



Who's Who in Reconstructive Work

Organization of Government Committees With Which the Automotive Industry is Concerned

Council of National Defense

Secretary of War, Chairman.

Secretary of Navy.

Secretary of Interior.

Secretary of Agriculture.

Secretary of Commerce.

Secretary of Labor.

Grosvenor B. Clarkson, Director.

Advisory Commission

Daniel Willard, President, B. & O. R. R., Chairman.

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Reconstruction Research Division

18th & D Sts., N. W.

The United States Council of National Defense announces its readiness to place at the command of the business world the information contained in the voluminous collection of data brought together, classified, indexed, and partly digested by its Reconstruction Research Division. It also offers the services of this Division in the procurement of such further special information as may be desired and which may aid in the reorganization of industry and the resumption of trade, or which may in any other manner promote progress in Reconstruction.

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Second National Bank Building, 509 Seventh St.

Hugh Chalmers, Vice-President of the N. A. C. C., is acting as Washington representative of the N. A. C. C. members. A staff consisting principally of engineers is assisting Mr. Chalmers in giving information to automobile manufacturers in connection with government work. Alfred Reeves, Gen. Mgr. of the N. A. C. C., spends a large part of his time in Washington, in connection with the various interests of the automobile industry.

dustry.
Highways Transport Committee Council of National Defense Building,

18th and D Sts., N. W.

This committee was appointed by the Council of National Defense, to assist in making most efficient use of highways as one of the means of strengthening the Nation's transportation resources. The most important policies thus far adopted are: (1) To increase highways transport resources, and curtail waste by eliminating the running of vehicles empty. Return Load Bureaus have been established for this purpose. (2) To make more food available and save farm labor for work on farms. Rural Motor Truck Express routes for agricultural areas to consuming centers or important shipping points are advocated. (3) To make highway transportation more economical and effective by encouraging the use of power driven vehicles. (4) To assist the Railroad Administration in the elimination of the terminal congestion.

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This Committee was organized for the purpose of co-operating with the Highways Transport Committee, in matters pertaining to motor truck haulage, and to give to builders of motor trucks of the United States such assistance as they may call for. It carries the authority of the N. A. C. C.

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TABLE OF CONTENTS

Commercial Car Specifications	Advertisers' Index	321
Editorials		
Efficient Repair Methods 42 Equipment and Appliances 45 Factory News 40 Legal Department 79 New Agencies 41 New Commercial Cars 67 News of the Trade 67 News of the Trade 67 News of the Trade 67 News and Trade Changes 41 Steel and Rubber Markets 88 SPECIAL ARTICLES Where \$350,000,000 is to be Spent on Roads 7 Apportionment of Federal Aid Funds by States 8 Highways Funds Should be Under Central Control 9 Concreting the White Horse Pike 20 Motor Truck Rates Fixed by Nebraska Commission 21 Kansas Expects to Have Over Ten Thousand Miles of Hard Surfaced Roads 22 County Bond Issues Proposed and Carried in Some of the States 24 National Motor Truck Development Tour Making Good Progress 25 Motor Transport Corps Convoy Making Rapid Headway 31 The Service Unit Department and Its Advantages 56 Monument Builder Finds Truck a Time and Money Saver Grocery Concern Finds Trucks Profitable on Short Hauls 12 Ice-Cream Manufacturer Utilizes Trailer to Great Advantage 77 Vermont Farmers Begin to Appreciate Value of Trucks Solving a Hurry-Up Loading Problem With a Truck 92 Proper Loading Methods Make Short Haul Work a Success 96 Motor Truck Facilitates Work of Wholesale Meat Houses 100 Working Trucks Overtime and Competing With the Railroads 100		
Equipment and Appliances 45 Factory News 40 Legal Department 79 New Agencies 41 New Commercial Cars 67 News of the Trade 35 Personal Items 39 Removals and Trade Changes 41 Steel and Rubber Markets 88 SPECIAL ARTICLES Where \$350,000,000 is to be Spent on Roads 7 Apportionment of Federal Aid Funds by States 8 Highways Funds Should be Under Central Control 9 Concreting the White Horse Pike 20 Motor Truck Rates Fixed by Nebraska Commission 21 Kansas Expects to Have Over Ten Thousand Miles of Hard Surfaced Roads 22 County Bond Issues Proposed and Carried in Some of the States 24 National Motor Truck Development Tour Making Good Progress 24 National Motor Truck Development Tour Making Good Progress 56 Motor Transport Corps Convoy Making Rapid Headway 31 The Service Unit Department and Its Advantages 56 Monument Builder Finds Truck a Time and Money Saver Grocery Concern Finds Trucks Profitable on Short Hauls 77 Ice-Cream Manufacturer Utilizes Trailer to Great Advantage 77 Vermont Farmers Begin to Appreciate Value of Trucks 82 Solving a Hurry-Up Loading Problem With a Truck 92 Proper Loading Methods Make Short Haul Work a Success 96 Motor Truck Facilitates Work of Wholesale Meat Houses 100 Working Trucks Overtime and Competing With the Railroads 100	Editorials Methods	
Factory News Legal Department 79 Legal Department 79 New Agencies 41 New Commercial Cars 67 News of the Trade 35 Personal Items 39 Removals and Trade Changes 41 Steel and Rubber Markets 88 SPECIAL ARTICLES Where \$350,000,000 is to be Spent on Roads 7 Apportionment of Federal Aid Funds by States 8 Highways Funds Should be Under Central Control 9 Concreting the White Horse Pike 20 Motor Truck Rates Fixed by Nebraska Commission 21 Kansas Expects to Have Over Ten Thousand Miles of Hard Surfaced Roads 22 County Bond Issues Proposed and Carried in Some of the States 24 National Motor Truck Development Tour Making Good Progress 25 Motor Transport Corps Convoy Making Rapid Headway 31 The Service Unit Department and Its Advantages 56 Monument Builder Finds Truck a Time and Money Saver Grocery Concern Finds Trucks Profitable on Short Hauls 12 Ice-Cream Manufacturer Utilizes Trailer to Great Advantage 78 Vermont Farmers Begin to Appreciate Value of Trucks Solving a Hurry-Up Loading Problem With a Truck 92 Proper Loading Methods Make Short Haul Work a Success 96 Motor Truck Facilitates Work of Wholesale Meat Houses 100 Working Trucks Overtime and Competing With the Railroads 100	Emcient Repair Methods	
Legal Department 79 New Agencies 41 New Commercial Cars 67 News of the Trade 939 Removals and Trade Changes 39 Removals and Trade Changes 41 Steel and Rubber Markets 88 SPECIAL ARTICLES Where \$350,000,000 is to be Spent on Roads 7 Apportionment of Federal Aid Funds by States 8 Highways Funds Should be Under Central Control 9 Concreting the White Horse Pike 20 Motor Truck Rates Fixed by Nebraska Commission 21 Kansas Expects to Have Over Ten Thousand Miles of Hard Surfaced Roads 22 County Bond Issues Proposed and Carried in Some of the States 24 National Motor Truck Development Tour Making Good Progress 25 Motor Transport Corps Convoy Making Rapid Headway 31 The Service Unit Department and Its Advantages 57 Grocery Concern Finds Trucks Profitable on Short Hauls 162 Ce-Cream Manufacturer Utilizes Trailer to Great Advantage 77 Cermont Farmers Begin to Appreciate Value of Trucks 20 Proper Loading Methods Make Short Haul Work a Success 96 Motor Truck Facilitates Work of Wholesale Meat Houses 100 Working Trucks Overtime and Competing With the Railroads 100	Equipment and Appliances	
New Agencies	Factory News.	
New Commercial Cars. News of the Trade. News of the Spent on Roads. News of the Spent on Roads. News of the Sates. News of the Sates. News of the Sates. News of the States. News of the Sates. News of the States. News of the	Legal Department	
News of the Trade	New Agencies	
Personal Items. 39 Removals and Trade Changes 41 Steel and Rubber Markets 88 SPECIAL ARTICLES Where \$350,000,000 is to be Spent on Roads 7 Apportionment of Federal Aid Funds by States 8 Highways Funds Should be Under Central Control 9 Concreting the White Horse Pike 20 Motor Truck Rates Fixed by Nebraska Commission 21 Kansas Expects to Have Over Ten Thousand Miles of Hard Surfaced Roads 22 County Bond Issues Proposed and Carried in Some of the States 24 National Motor Truck Development Tour Making Good Progress 25 Motor Transport Corps Convoy Making Rapid Headway 31 The Service Unit Department and Its Advantages 57 Grocery Concern Finds Trucks Profitable on Short Hauls Ice-Cream Manufacturer Utilizes Trailer to Great Advantage 77 Vermont Farmers Begin to Appreciate Value of Trucks 8 Solving a Hurry-Up Loading Problem With a Truck 92 Proper Loading Methods Make Short Haul Work a Success 96 Motor Truck Facilitates Work of Wholesale Meat Houses 100 Working Trucks Overtime and Competing With the Railroads 100	New Commercial Cars	
Removals and Trade Changes		
Removals and Trade Changes	Personal Items	39
Steel and Rubber Markets	Removals and Trade Changes	41
Where \$350,000,000 is to be Spent on Roads	Steel and Rubber Markets	88
Where \$350,000,000 is to be Spent on Roads		
Apportionment of Federal Aid Funds by States 8 Highways Funds Should be Under Central Control 9 Concreting the White Horse Pike 20 Motor Truck Rates Fixed by Nebraska Commission 21 Kansas Expects to Have Over Ten Thousand Miles of Hard Surfaced Roads 22 County Bond Issues Proposed and Carried in Some of the States 24 National Motor Truck Development Tour Making Good Progress 25 Motor Transport Corps Convoy Making Rapid Headway 31 The Service Unit Department and Its Advantages 55 Monument Builder Finds Truck a Time and Money Saver 75 Grocery Concern Finds Trucks Profitable on Short Hauls 162 Ce-Cream Manufacturer Utilizes Trailer to Great Advantage 78 Vermont Farmers Begin to Appreciate Value of Trucks 80lving a Hurry-Up Loading Problem With a Truck 92 Proper Loading Methods Make Short Haul Work a Success 96 Motor Truck Facilitates Work of Wholesale Meat Houses 100 Working Trucks Overtime and Competing With the Railroads 104	SPECIAL ARTICLES	
Apportionment of Federal Aid Funds by States 8 Highways Funds Should be Under Central Control 9 Concreting the White Horse Pike 20 Motor Truck Rates Fixed by Nebraska Commission 21 Kansas Expects to Have Over Ten Thousand Miles of Hard Surfaced Roads 22 County Bond Issues Proposed and Carried in Some of the States 24 National Motor Truck Development Tour Making Good Progress 25 Motor Transport Corps Convoy Making Rapid Headway 31 The Service Unit Department and Its Advantages 55 Monument Builder Finds Truck a Time and Money Saver 75 Grocery Concern Finds Trucks Profitable on Short Hauls 162 Ce-Cream Manufacturer Utilizes Trailer to Great Advantage 78 Vermont Farmers Begin to Appreciate Value of Trucks 80lving a Hurry-Up Loading Problem With a Truck 92 Proper Loading Methods Make Short Haul Work a Success 96 Motor Truck Facilitates Work of Wholesale Meat Houses 100 Working Trucks Overtime and Competing With the Railroads 104	Where \$350,000,000 is to be Spent on Roads	7
Highways Funds Should be Under Central Control 9 Concreting the White Horse Pike 20 Motor Truck Rates Fixed by Nebraska Commission 21 Kansas Expects to Have Over Ten Thousand Miles of Hard Surfaced Roads 22 County Bond Issues Proposed and Carried in Some of the States 24 National Motor Truck Development Tour Making Good Progress 25 Motor Transport Corps Convoy Making Rapid Headway 31 The Service Unit Department and Its Advantages 56 Monument Builder Finds Truck a Time and Money Saver Grocery Concern Finds Trucks Profitable on Short Hauls 75 Ice-Cream Manufacturer Utilizes Trailer to Great Advantage 78 Vermont Farmers Begin to Appreciate Value of Trucks 82 Solving a Hurry-Up Loading Problem With a Truck 92 Proper Loading Methods Make Short Haul Work a Success 96 Motor Truck Facilitates Work of Wholesale Meat Houses 100 Working Trucks Overtime and Competing With the Railroads 104		
Concreting the White Horse Pike. 20 Motor Truck Rates Fixed by Nebraska Commission. 21 Kansas Expects to Have Over Ten Thousand Miles of Hard Surfaced Roads. 22 County Bond Issues Proposed and Carried in Some of the States. 24 National Motor Truck Development Tour Making Good Progress. 25 Motor Transport Corps Convoy Making Rapid Headway 31 The Service Unit Department and Its Advantages. 56 Monument Builder Finds Truck a Time and Money Saver Grocery Concern Finds Trucks Profitable on Short Hauls Ice-Cream Manufacturer Utilizes Trailer to Great Advantage. 78 Vermont Farmers Begin to Appreciate Value of Trucks Solving a Hurry-Up Loading Problem With a Truck. 92 Proper Loading Methods Make Short Haul Work a Success. 96 Motor Truck Facilitates Work of Wholesale Meat Houses 100 Working Trucks Overtime and Competing With the Railroads. 104		
Motor Truck Rates Fixed by Nebraska Commission. 21 Kansas Expects to Have Over Ten Thousand Miles of Hard Surfaced Roads. 22 County Bond Issues Proposed and Carried in Some of the States. 24 National Motor Truck Development Tour Making Good Progress. 25 Motor Transport Corps Convoy Making Rapid Headway 31 The Service Unit Department and Its Advantages. 56 Monument Builder Finds Truck a Time and Money Saver Grocery Concern Finds Trucks Profitable on Short Hauls Ice-Cream Manufacturer Utilizes Trailer to Great Advantage. 78 Vermont Farmers Begin to Appreciate Value of Trucks Solving a Hurry-Up Loading Problem With a Truck. 92 Proper Loading Methods Make Short Haul Work a Success. 96 Motor Truck Facilitates Work of Wholesale Meat Houses 100 Working Trucks Overtime and Competing With the Railroads. 104	Concreting the White Horse Pike	-
Kansas Expects to Have Over Ten Thousand Miles of Hard Surfaced Roads. 22 County Bond Issues Proposed and Carried in Some of the States	Motor Truck Rates Fixed by Nebracka Commission	
Hard Surfaced Roads	Kanege Evacete to Have Over Ten Thousand Miles of	41
the States National Motor Truck Development Tour Making Good Progress		22
the States National Motor Truck Development Tour Making Good Progress	County Pand Issues Droposed and Carried in Come of	44
Motor Transport Corps Convoy Making Rapid Headway 31 The Service Unit Department and Its Advantages	County Bond Issues Proposed and Carried in Some of	0.4
Motor Transport Corps Convoy Making Rapid Headway 31 The Service Unit Department and Its Advantages	the States	24
Motor Transport Corps Convoy Making Rapid Headway The Service Unit Department and Its Advantages	National Motor Truck Development Tour Making Good	0.5
The Service Unit Department and Its Advantages	Progress	
Monument Builder Finds Truck a Time and Money Saver Grocery Concern Finds Trucks Profitable on Short Hauls Ice-Cream Manufacturer Utilizes Trailer to Great Advantage. Vermont Farmers Begin to Appreciate Value of Trucks Solving a Hurry-Up Loading Problem With a Truck Proper Loading Methods Make Short Haul Work a Success. Motor Truck Facilitates Work of Wholesale Meat Houses Working Trucks Overtime and Competing With the Railroads. SUBSCRIPTION RATES	Motor Transport Corps Convoy Making Rapid Headway	
Grocery Concern Finds Trucks Profitable on Short Hauls Ice-Cream Manufacturer Utilizes Trailer to Great Advantage		
Ice-Cream Manufacturer Utilizes Trailer to Great Advantage		
Advantage	Grocery Concern Finds Trucks Profitable on Short Hauls	77
Vermont Farmers Begin to Appreciate Value of Trucks Solving a Hurry-Up Loading Problem With a Truck		
Vermont Farmers Begin to Appreciate Value of Trucks 82 Solving a Hurry-Up Loading Problem With a Truck 92 Proper Loading Methods Make Short Haul Work a Success. 96 Motor Truck Facilitates Work of Wholesale Meat Houses 100 Working Trucks Overtime and Competing With the Railroads. 104 SUBSCRIPTION RATES	Advantage	
Motor Truck Facilitates Work of Wholesale Meat Houses 100 Working Trucks Overtime and Competing With the Railroads	Vermont Farmers Begin to Appreciate Value of Trucks	
Motor Truck Facilitates Work of Wholesale Meat Houses 100 Working Trucks Overtime and Competing With the Railroads	Solving a Hurry-Up Loading Problem With a Truck	92
Motor Truck Facilitates Work of Wholesale Meat Houses 100 Working Trucks Overtime and Competing With the Railroads	Proper Loading Methods Make Short Haul Work a	
Motor Truck Facilitates Work of Wholesale Meat Houses 100 Working Trucks Overtime and Competing With the Railroads	Success	
Railroads	Motor Truck Facilitates Work of Wholesale Meat Houses	100
Railroads	Working Trucks Overtime and Competing With the	
SUBSCRIPTION RATES		104
SUBSCRIPTION RATES		
The bod Control of the control of th	***************************************	
Canada 2.00 Foreign Make Checks, Money Orders, etc., payable to Chilton Company	Walter A Court and A Court	\$1.00
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